

Service Manual

(1)

ORDER NO.
ARP2121

COMPACT DISC JUKEBOX

CJ-V50

- Refer to the service manual ARP2122, CJ-V50.
- This manual is applicable to the HEM type.

CONTENTS

| | |
|---|----|
| 1. SAFETY INFORMATION | 2 |
| 2. PARTS LOCATIONS | 4 |
| 3. DISASSEMBLY | 11 |
| 4. P. C. BOARDS NAME | 14 |
| 5. SERVICE MODE | 15 |
| 6. NOTES ON REPLACING THE LITHIUM BATTERY AND RAM (IC2 : HM62256LP-12) | 16 |

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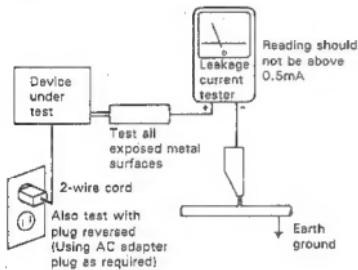
1. SAFETY INFORMATION

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.



WARNING!

Lithium batteries. Danger of explosion. Replacement must be done by qualified personnel and only by following the instructions given in the service manual.

This warning is stated on the product or in the operating instructions. When replacing the lithium batteries, follow the note below.

Dispose of the used battery promptly. Keep away from children. Do not disassemble and do not dispose of in fire.

The battery used in this device may present a fire or chemical hazard if mistreated. Do not recharge, disassemble, heat above 100°C or incinerate. Replace only with the same Part Number. Use of another battery may present a risk of fire or explosion.

Note: The lithium battery installation position is shown in the exploded view and the P.C. board pattern.

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a Δ on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or a additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

ADVARSEL!

Lithiumbatteri — Eksplosionsfare ved fejlagtig håndtering. Udskiftning må kun ske med batteri af samme fabrikat og type. Lever det brugte batteri tilbage til leverandøren.

Denne varsel er angivet på produktet eller i brugsvejledningen. Ved udskiftning af lithium batterierne følges nedenstående anvisning.

Batterierne må kun udskiftes med batterier af samme type og mærke.

VARNING

Explosionsfara vid felaktigt batteribyte. Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparat tillverkaren. Kassera använt batteri enligt fabrikantens instruktion.

Denna varning finns på apparaten eller i bruksanvisningen. Följ nedanstående anvisningar vid byte av lithiumbatterier. Batterierna får endast bytas ut mot lithium-batterier av samma typ och fabrikat.

(FOR EUROPEAN MODEL ONLY)

VARO!

AVATTAESSA JA SUJALUKITUS
OHITETTAESSA OLET ALTIINA
NÄKYMÄTÖMÄÄLE LASERSÄTEILYLLÄ.
ÄLÄ KATSO SÄTEESEEN.



ADVERSEL:

USYNLIG LASERSTRÄLNING VED ÅBNING
NÅR SIKKERHEDSÅBRYDERE ER UDE AF
FUNKTION UNGÅ UDSAETTELSE FOR
STRÄLING.

WARNING!

OSYNLIG LASERSTRÄLNING NÄR DENNA
DEL ÄR ÖPPNAD OCH SPÄRREN
ÄR URKOPPLAD. BETRAKTA EJ STRÄLEN.

WARNING!

DEVICE INCLUDES LASER DIODE WHICH
EMITS INVISIBLE INFRARED RADIATION
WHICH IS DANGEROUS TO EYES. THERE IS
A WARNING SIGN ACCORDING TO PICTURE
1 INSIDE THE DEVICE CLOSE TO THE LASER
DIODE.



LASER
Picture 1
Warning sign for
laser radiation

IMPORTANT

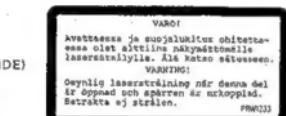
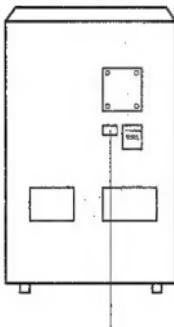
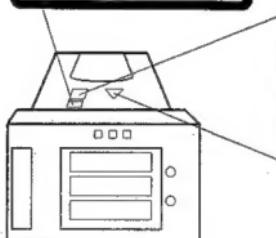
THIS PIONEER APPARATUS CONTAINS
LASER OF HIGHER CLASS THAN 1.
SERVICING OPERATION OF THE APPARATUS
SHOULD BE DONE BY A SPECIALLY
INSTRUCTED PERSON.

LASER DIODE CHARACTERISTICS

MAXIMUM OUTPUT POWER: 5 mw
WAVELENGTH: 780-785 nm

LABEL CHECK

• MAIN SECTION (REAR SIDE)

• CD SECTION
(REMOVING CONDITION
OF THE BONNET COVER)

CLASS 1
LASER PRODUCT

VRW-328

HEM type

CAUTION
INVISIBLE LASER
RADIATION WHEN OPEN,
AVOID EXPOSURE
TO BEAM

DSK1779

WEM type

ADVARSEL:
USYNLIG LASERSTRÄLNING VED ÅBNING NÅR SIKKERHEDSÅBRYDERE ER UDE AF FUNKTION.
UNDGA UDSAETTELSE FOR STRÄLING.

VORSICHT!
UNSICHTBARE LASER-STRÄHLUNG TRETET AUF, WENN DIESELLE
ODER KLAFFO GESCHÄFT GESTÖPFT WIRD. DEM STRÄNG AUSSETZEN!



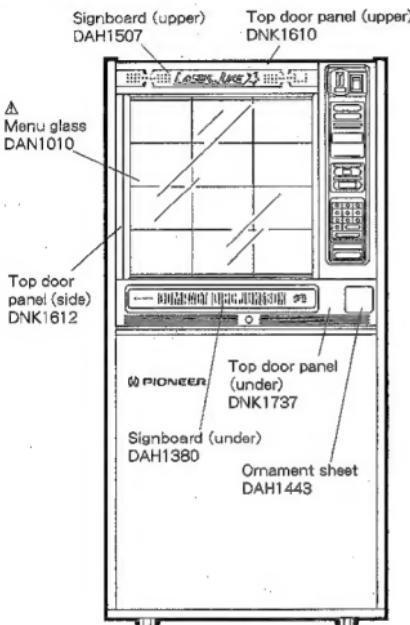
WEM type

Additional Laser Caution

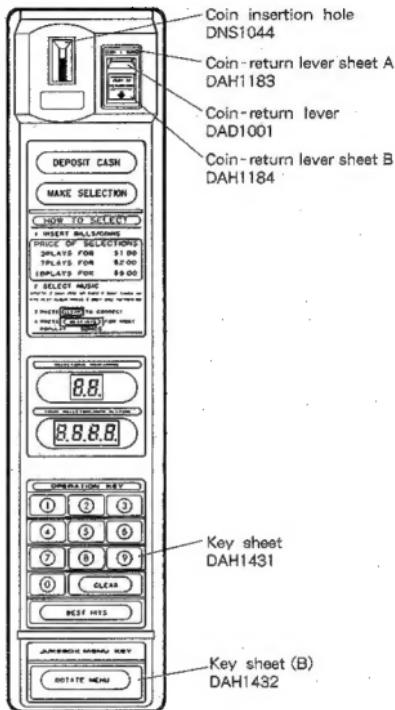
1. The player microcomputer checks the inserting condition of magazines A, B and C by using the combined signals of the SENS1 (S804), SENS2 (S805), SENS3 (S806), LOCK1 (S801), LOCK2 (S802) and LOCK3 (S803) switches. It is after these three magazines are fully inserted that commands from the control microcomputer are accepted. The laser diode is turned ON for illumination by outputting the laser diode ON signal from the control microcomputer when the CLAMP switch (S1001) (DSK1001), which signals that the tray is to be pulled from the magazine and detects clamping condition, is set to ON and the player receives the "rising command" in the disc clamping condition. If no disc is available, it turns OFF after 20 seconds. The illuminated laser diode goes out when receiving a "Reject command", a "disc change command" or a "magazine eject command". The laser diode continues to oscillate when pin ② of CXA1081 (IC1) is connected to GND or to pin ④.
2. If the fault condition described in 1 is induced with the cover open and with the servo mechanism block removed to be turned over, close viewing of the objective lens with the naked eye will cause exposure to a class 1 or higher laser beam.

2. PARTS LOCATIONS

2.1 EXTERIOR

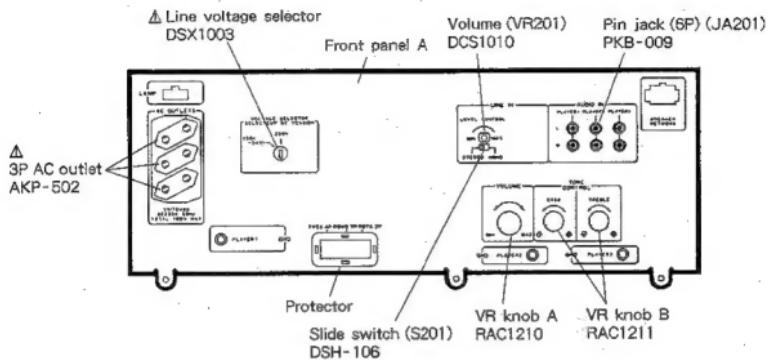


•OPERATION SECTION

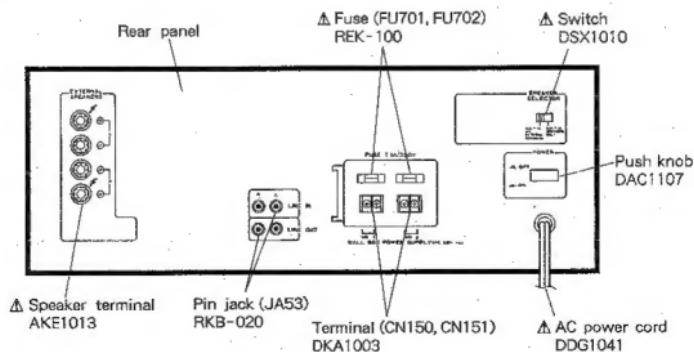


2.2 AMP SECTION

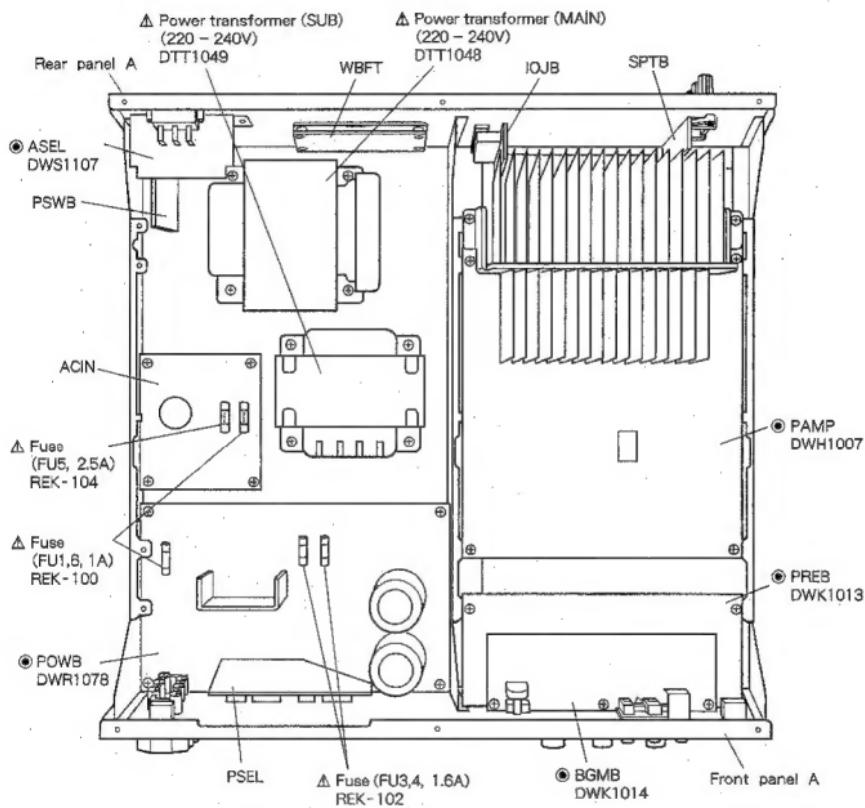
• FRONT VIEW



• REAR VIEW

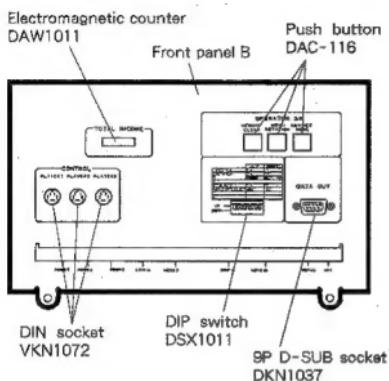


• TOP VIEW

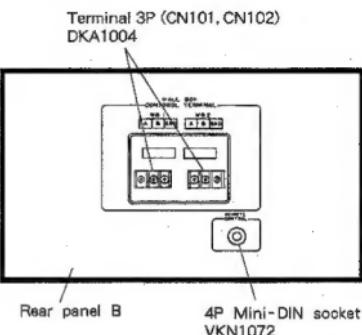


2.3 COMMANDER SECTION

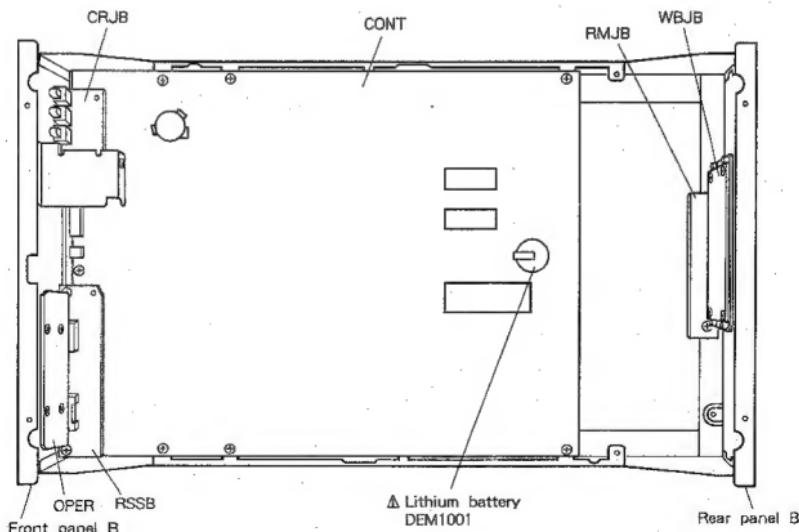
• FRONT VIEW



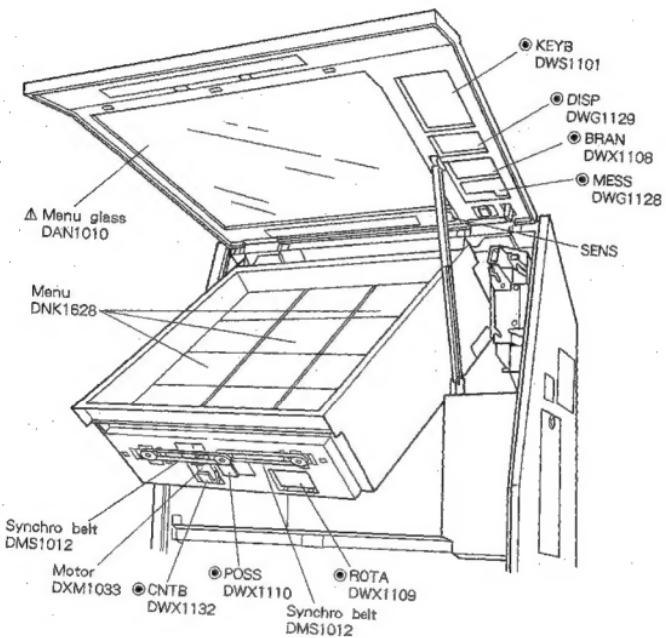
• REAR VIEW



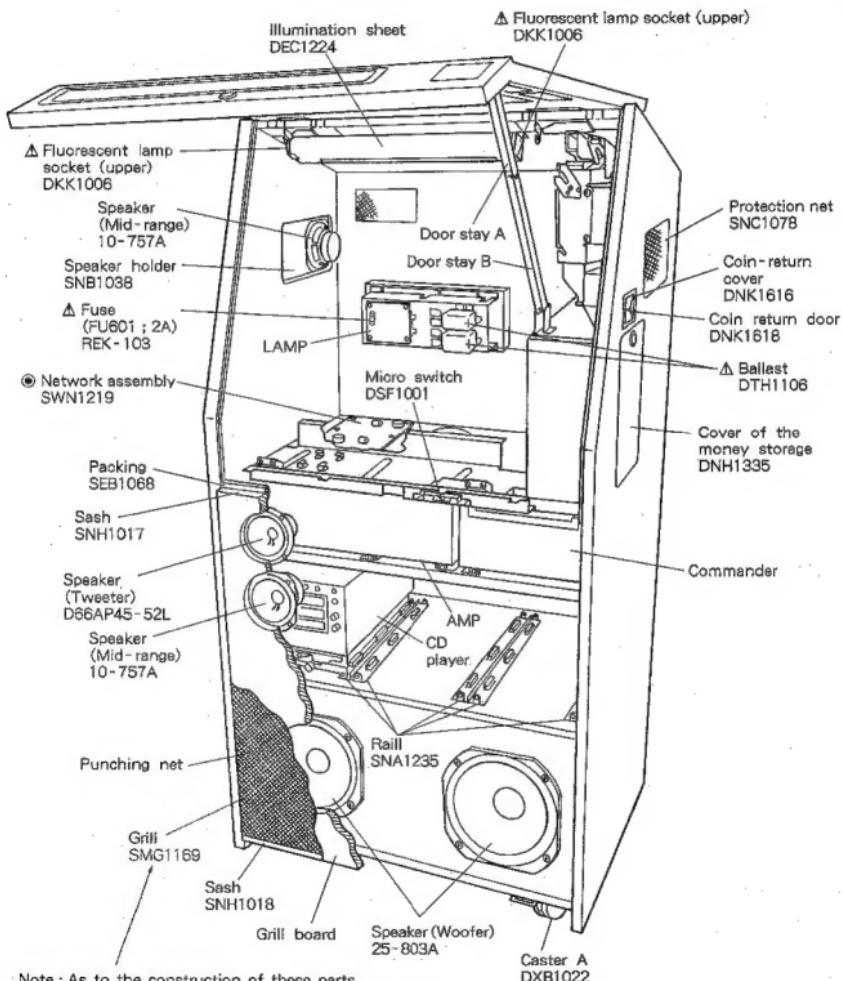
• TOP VIEW



2.4 REMOVING CONDITION OF THE UNDER LAMP ASSEMBLY

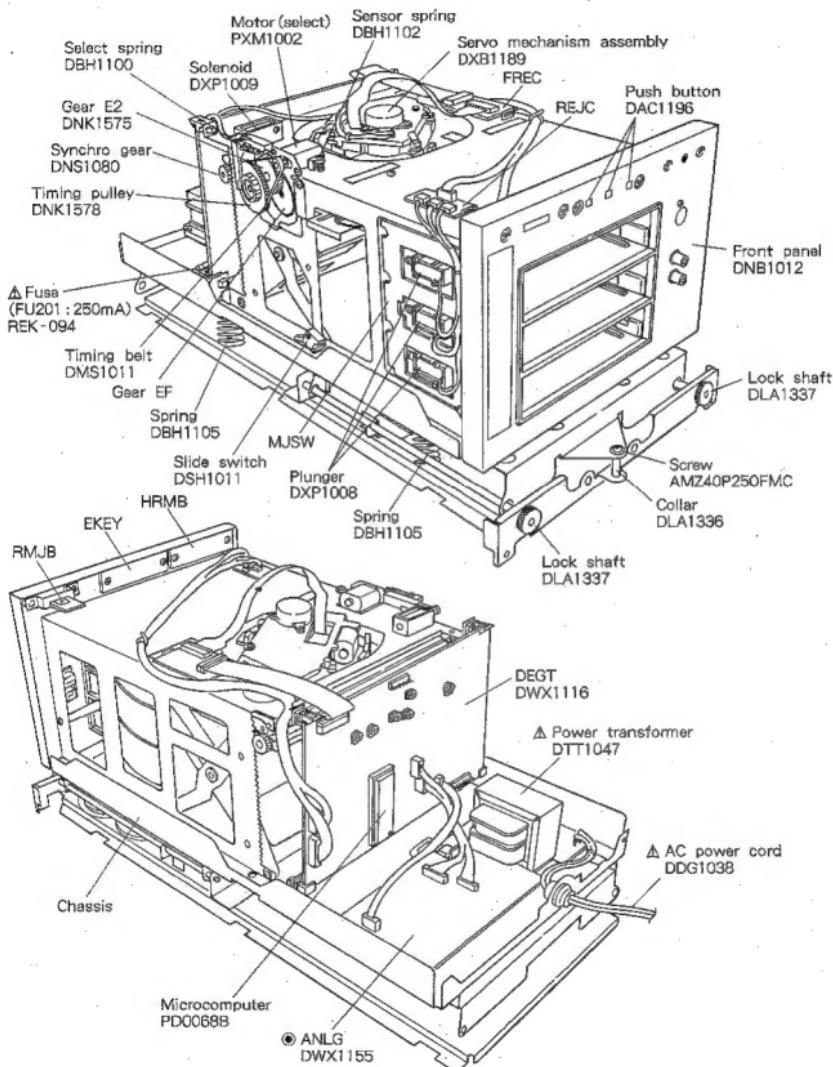


2.5 REMOVING CONDITION OF THE MENU BOARD



Note : As to the construction of these parts, refer to the exploded view.

2.6 CD PLAYER SECTION



3. DISASSEMBLY

3.1 REMOVING THE TOP DOOR ASSEMBLY

1. Open the menu door, and remove six screws ① and two R pins to remove the menu board assembly.

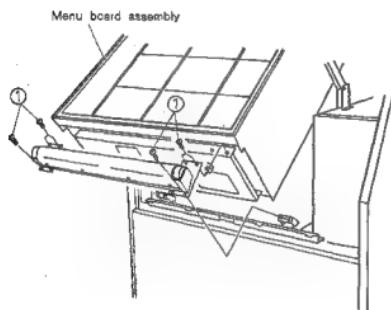


Fig. 3-1

2. Loosen four screws ② and remove two screws ③ to remove the upper lamp assembly.
3. Remove two screws ④ to remove the CA holder C assembly.

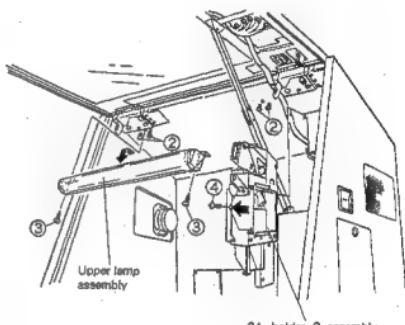


Fig. 3-3

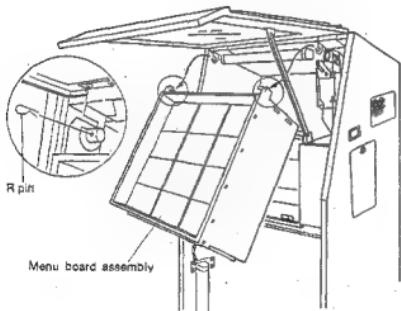


Fig. 3-2

4. Remove six screws ⑤, two screws ⑥ and two screws ⑦ to remove the top door assembly.

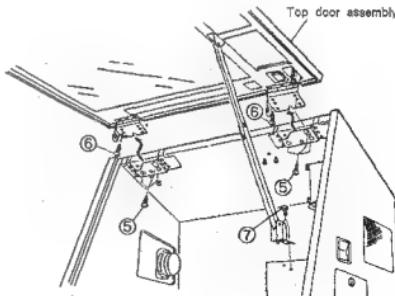


Fig. 3-4

3.2 REMOVING THE MENU MOTOR ASSEMBLY

1. Remove two screws ① to remove the menu motor assembly.

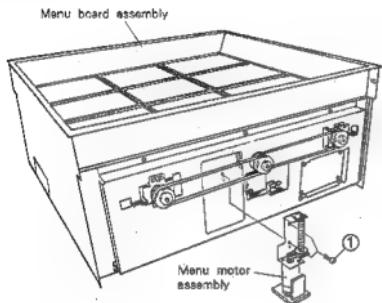


Fig. 3-5

3.4 REMOVING THE LAMP AND NETWORK ASSEMBLY

1. Remove six screws ① to remove the network assembly.
2. Remove four screws ② to remove the LAMP.

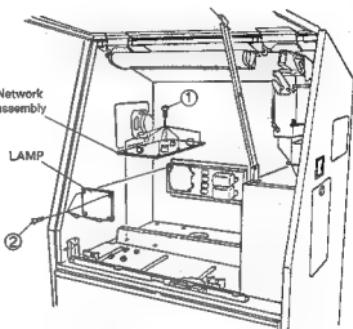


Fig. 3-7

3.3 REMOVING THE SYNCHRO BELT

1. Loosen two screws ① and remove two springs with plier, and remove two synchro belts by pushing the synchro pulley in the direction of arrow.

Note: When the synchro belt is replaced be sure to perform the three surfaces of the menu synchronous adjustment.

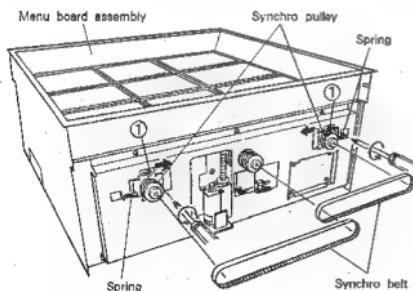


Fig. 3-6

3.5 REMOVING THE ROTA AND POSS

1. Remove four screws ① to remove the ROTA.
2. Remove a screw ② to remove the POSS.

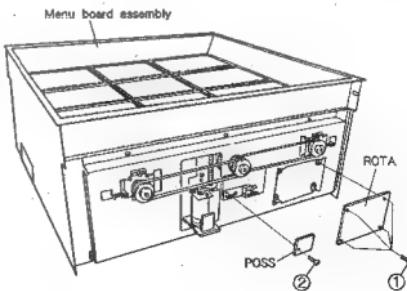


Fig. 3-8

3.6 REMOVING THE MESS, BRAN, DISP AND KEYB

1. Remove four screws ① to remove the MESS.
2. Remove four screws ② to remove the BRAN.
3. Remove four screws ③ to remove the DISP.
4. Remove eight screws ④ to remove the KEYB.
5. Remove two screws ⑤ to remove the SENS.

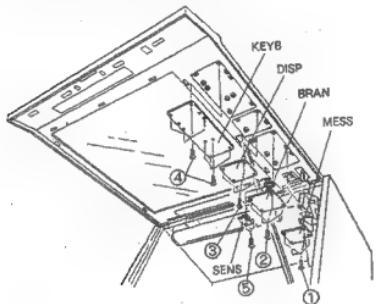


Fig. 3-9

3.7 REMOVING THE AMP, COMMANDER AND CD PLAYER

1. Remove three screws ① to remove the AMP.
2. Remove two screws ② to remove the commander.
3. Remove two screws ③ to remove the CD player.

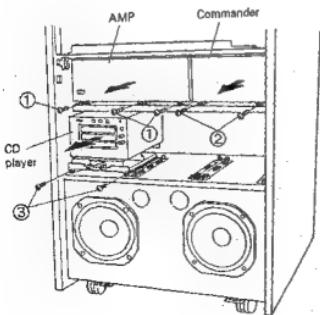


Fig. 3-10

3.8 REMOVING THE SPEAKER (WOOFER)

1. Remove four screws ① and disconnect the connector of speaker cord to remove the speaker.

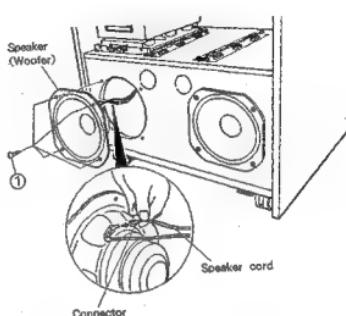


Fig. 3-11

3.9 REMOVING THE GLASS

1. Remove the top door assembly. (Refer to section 3.1.)
2. Set the glass side of top door assembly to the downward. Remove thirty-seven screws ① to remove the top door base, then remove the glass.

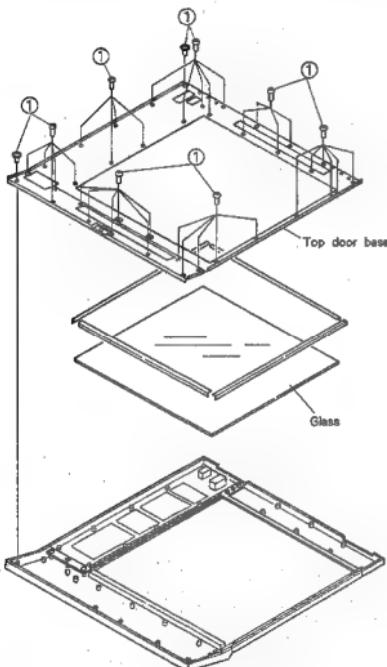


Fig. 3-12

3.10 REMOVING THE GLOW LAMP

Refer to the operating instructions (page 20).

4. P. C. BOARDS NAME

MAIN SECTION

| | |
|------|----------------------------------|
| MESS | MESSAGE |
| DISP | DISPLAY |
| KEYB | KEYBOARD |
| BRAN | BRANCH |
| ROTA | ROTATION |
| POSS | POSITION SENSOR |
| LAMP | LAMP |
| CNTB | COUNTER BOARD |
| PAMP | POWER AMPLIFIER |
| SPTB | SPEAKER TERMINAL BOARD |
| PREB | PRE AMPLIFIER BOARD |
| POWB | POWER BOARD |
| ACIN | AC INPUT BOARD |
| PSEL | PRIMARY VOLTAGE SELECTOR BOARD |
| ASEL | AMPLIFIER VOLTAGE SELECTOR BOARD |
| PSWB | POWER SWITCH BOARD |
| CONT | CONTROL |
| OPER | OPERATION |
| CRJB | CD REMOTE JACK BOARD |
| RMJB | REMOTE CONTROL JACK BOARD |
| SENS | SENSOR |
| WBJB | WALL BOX JACK BOARD |
| RSSB | RS232C AND SW BOARD |
| BGMB | BACK GROUND MUSIC BOARD |
| IOJB | IN OUT JACK BOARD |
| WBFT | WALL BOX FUSE TERMINAL |

CD PLAYER SECTION

| | |
|------|---------------------------|
| EKEY | EJECT KEY |
| DEGT | DIGITAL DECODING UNIT |
| ANLG | ANALOG UNIT |
| DJAK | DIGITAL JACK |
| PJAK | PIN JACK |
| MJSW | MAGAZINE EJECT SWITCH |
| SENS | SENSOR |
| REJC | REJECT |
| FREC | FLEXIBLE READER CONNECTOR |
| HRMB | HOUR METER BOARD |
| RMJB | REMOTE JACK BOARD |

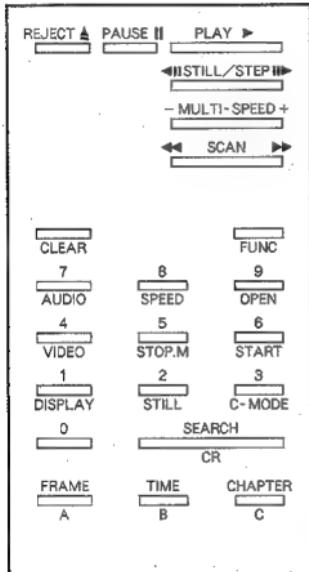
5. SERVICE MODE

- As to using the service mode, refer to the operating instructions (pages 24 - 28).

And also as to the cord table of the service mode, refer to the operating instructions (pages 20 - 23).

- Shows the function table of the remote control (RU-V101) for service as follows. When operating the CD changer section directly, it is able to operate as shown in the below by connect the wired-remote control to the CD changer.

5.1 FUNCTION TABLE OF THE REMOTE CONTROL FOR SERVICE



| | |
|----------------------|-------------------|
| *1 REJECT | : Spindle stop |
| *1 PAUSE | : Pause |
| *1 PLAY | : Play |
| *2 STILL/STEP ►► | : Disc select |
| *2 STILL/STEP ◀◀ | : Disc return |
| *2 MULTI-SPEED + | : Test command |
| *2 MULTI-SPEED - | : Test command |
| *1 SCAN ►► | : Scan fwd |
| *1 SCAN ◀◀ | : Scan rev |
| *1 CLEAR | : Clear |
| *2 FRAME | : Frame set |
| *2 TIME | : Time set |
| *2 CHAPTER | : Track set |
| *1 SEARCH | : Search |
| *1 10key | : Numerical input |
| DISPLAY (FUNC + 1) | : no entry |
| STILL (FUNC + 2) | : no entry |
| C-MODE (FUNC + 3) | : no entry |
| VIDEO (FUNC + 4) | : no entry |
| *1 STOP.M (FUNC + 5) | : Stop marker |
| *1 START (FUNC + 6) | : Start |
| AUDIO (FUNC + 7) | : no entry |
| SPEED (FUNC + 8) | : no entry |
| *1 OPEN (FUNC + 9) | : Magazine eject |

*1Normal function command
 *2Function command is different from the LD-V530.

Not markedNo entry command

● Test command

- 0 + MULTI-SPEED (+, -) keys : LD-ON
- 1 + MULTI-SPEED (+, -) keys : FOCUS IN
- 2 + MULTI-SPEED (+, -) keys : Spindle kick
- 3 + MULTI-SPEED (+, -) keys : Tracking and slider servo ON
- 4 + MULTI-SPEED (+, -) keys : Slider fwd (500ms)] Stop by MULTI-SPEED (+, -) key
- 5 + MULTI-SPEED (+, -) keys : Slider rev (500ms)] Stop by MULTI-SPEED (+, -) key
- 6 + MULTI-SPEED (+, -) keys : Tracking and slider servo OFF
- 7 + MULTI-SPEED (+, -) keys : Slider stop and spindle stop
- 8 + MULTI-SPEED (+, -) keys : Slider stop and spindle stop
- 9 + MULTI-SPEED (+, -) keys : LD-OFF

6. NOTES ON REPLACING THE LITHIUM BATTERY AND RAM (IC2 : HM62256LP-12)

- When replacing the Lithium battery (DEM1001) or the RAM (IC2 : HM62256LP-12) in the CONT unit of the commander block, clear RAM data in the following manner.
If the data is not cleared, a malfunction may occur.

● How to clear

- A** If the accessory wired-remote control of the CJ-V50A is existed, insert the wired-remote control (accessory of the CJ-V50A) to the mini DIN connector (4P) on the rear panel of the commander.

- B** If the accessory wired-remote control of the CJ-V50A is not existed, connect four pins of the mini DIN connector (4P) on the RMJB unit to the chassis (GND).

1. Set the power switch to OFF and all the function switches of the commander block to ON.
2. While simultaneously pressing four keys, the volume + and - keys and the cancel A and II keys on the remote control unit, set the power switch to ON. A buzzer sounds in a few seconds, indicating that the clear operation is completed.

(Note : An error may occur if you set the power switch to OFF while pressing these four keys.)
When the data is cleared, the rate settings return to their default values and all other data become 0. Be careful when performing this operation as it sets even the non-resettable data all to 0.



Service Manual



ORDER NO.
ARP2122

COMPACT DISC JUKEBOX

CJ-V50 PD-MV55

- Refer to the service manual (1) ARP2121, CJ-V50.

- This manual is applicable to the CJ-V50/HEM and PD-MV55/WEM types.
- PD-MV55/WEM type is a optional CD player of the CJ-V50/HEM type.
- PD-MV55/WEM type is the same as the built-in CD player of the CJ-V50/HEM type except packing and accessory parts.
- Ce manuel pour le service comprend les explications de réglage en français.
- Este manual de servicio trata del método ajuste escrito en español.

CONTENTS

| | | | |
|---|----|------------------------------|-----|
| 1. SAFETY INFORMATION | 2 | 6. P.C.B.'s PARTS LIST | 86 |
| 2. EXPLODED VIEWS AND PARTS LIST | 4 | 7. ADJUSTMENTS | 93 |
| 3. PACKING | 31 | RÉGLAGES | 104 |
| 4. SCHEMATIC DIAGRAMS AND P. C. BOARDS PATTERN | 33 | AJUSTES | 115 |
| 5. BLOCK DIAGRAM | 84 | 8. IC DESCRIPTION | 126 |

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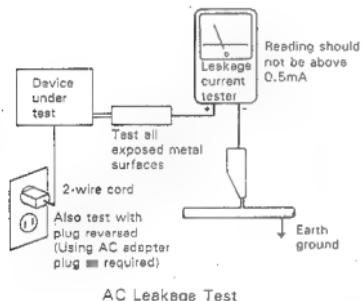
1. SAFETY INFORMATION

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AC Leakage Test

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Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a Δ on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or a additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

ADVARSEL!

Lithiumbatteri — Eksplosionsfare ved fejlagtig håndtering. Udskiftning må kun ske med batteri af samme fabrikat og type. Lever det brugte batteri tilbage til leverandøren.

Denne advarsel er angivet på produktet eller i brugsvægtsdningen. Ved udskiftning af lithium batterierne følges nedanstående anvisning.

Batterierne må kun udskiftes med batterier af samme type og mærke.

VARNING

Explosionsfara vid felaktigt batteribyte. Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparat tillverkaren. Kassera använt batteri enligt fabrikantens instruktion.

Denna varning finns på apparaten eller i bruksanvisningen. Följ nedanstående anvisningar vid byte av litiumbatterier.

Batterierna får endast bytas ut mot litiumbatterier av samma typ och fabrikat.

(FOR EUROPEAN MODEL ONLY)

VARO!

AVATTAESSA JA SUOJALUKITUS
OHITETTAESSA OLET ALTTEINA
NÄKYMÄTÖMÄLLÉ LASERSÄTEILYLLÉ.
ALA KATSO SATEESEN.

ADVERSEL:

USYNLIG LASERSTRÅLING VED ÅBNING
NÅR SIKKERHEDSAFTRYDRE ER UDE AF
FUNKTION UNDGÅ UDSÆTTELSE FOR
STRÅLING.

VARNING!

OSYNLIG LASERSTRÅLING NÄR DENNA
DEL ÄR ÖPPNAD OCH SPAREN
ÄR URKOPPLAD. BETRÄKTA EJ STRÅLEN.



LASER

Kuva 1

Lasersäteilyyn
varoitusmerkki

WARNING!

DEVICE INCLUDES LASER DIODE WHICH
EMITS INVISIBLE INFRARED RADIATION
WHICH IS DANGEROUS TO EYES. THERE IS
A WARNING SIGN ACCORDING TO PICTURE
1 INSIDE THE DEVICE CLOSE TO THE LASER
DIODE.



LASER

Picture 1

Warning sign for
laser radiation

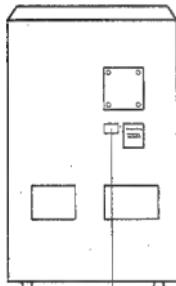
IMPORTANT

THIS PIONEER APPARATUS CONTAINS
LASER OF HIGHER CLASS THAN 1.
SERVICING OPERATION OF THE APPARATUS
SHOULD BE DONE BY A SPECIALLY
INSTRUCTED PERSON.

LASER DIODE CHARACTERISTICS
MAXIMUM OUTPUT POWER: 5 mw
WAVELLENGTH: 780-785 nm

LABEL CHECK

• MAIN SECTION (REAR SIDE)

• CD SECTION
(REMOVING CONDITION
OF THE BONNET COVER)

CAUTION
INVISIBLE LASER
RADIATION WHEN OPEN,
AVOID EXPOSURE
TO BEAM

DRW105

WEM type

ADVARSEL
USYNLIG LASERSTRÅLING. VARMING NÅR SIKKERHEDSAF-
TRYDRE ER UDE AF FUNKTION.
UNDGA UDSÆTTELSE FOR STRÅLING.

VORSICHT!
UNSICHTBARE LASER-STRÄHLUNG TRETET AUF, WENN SICHER-
HEITSSCHALTER GEÖFFNET SIND. VERMEIDEN SIE STRÄHLUNG.

DRW105

WEM type

Additional Laser Caution

1. The player microcomputer checks the inserting condition of magazines A, B and C by using the combined signals of the SENS1(S804), SENS2(S805), SENS3(S806), LOCK1(S801), LOCK2(S802) and LOCK3(S803) switches. It is after these three magazines are fully inserted that commands from the control microcomputer are accepted. The laser diode is turned ON for illumination by outputting the laser diode ON signal from the control microcomputer when the CLAMP switch (S1001) (DSK1001), which signals that the tray is to be pulled from the magazine and detects clamping condition, is set to ON and the player receives the "rising command" in the disc clamping condition. If no disc is available, it turns OFF after 20 seconds. The illuminated laser diode goes out when receiving a "Reject command", a "disc change command" or a "magazine eject command". The laser diode continues to oscillate when pin ⑧ of CXA1081S (IC1) is connected to GND or to pin ⑨.
2. If the fault condition described in 1 is induced with the cover open and with the servo mechanism block removed to be turned over, close viewing of the objective lens with the naked eye will cause exposure to a class 1 or higher laser beam.

CLASS 1
LASER PRODUCT

VWR 328

HEM type

2. EXPLODED VIEWS AND PARTS LIST

NOTES :

- Parts without part number cannot be supplied.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "◎" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

2.1 MAIN SECTION

2.1.1 EXTERIOR (1)

Parts List

| Mark | No. | Part No. | Description | Mark | No. | Part No. | Description |
|------|-----|--------------|------------------------------------|------|-----|--------------|--------------------|
| | 1 | DAH1507 | Sign board (upper) | | 40 | SNH1018 | Sash |
| | 2 | DAH1380 | Sign board (under) | | 41 | SNH1017 | Sash |
| | 3 | DAH1183 | Coin-return lever sheet A | | 42 | SEB1072 | Cushion |
| | 4 | DAH1443 | Ornament sheet | | 43 | SEW1014 | Safety belt |
| | 5 | SBA-194 | Screw | | 44 | SEB1068 | Packing |
| | 6 | DAH1481 | Key sheet | | 45 | SDF1013 | Earth lug assembly |
| | 7 | DNK1238 | Key knob A | | 46 | SNA1233 | Frame |
| | 8 | DNK1214 | Key knob B | | 47 | PMB50P180FZK | Screw |
| | 9 | DAH1432 | Key sheet (B) | | 48 | DEL-110 | Fluorescent lamp |
| | 10 | CWC31P200FZK | Screw | | 49 | SLH1050 | Rail assembly |
| | 11 | SNB1035 | Door stopper | | 50 | CWC35P200FZK | Screw |
| | 12 | RWC81P200FUC | Screw | | | | DS holder assembly |
| | 13 | SNB1037 | Hook holder | | | | Key plate (B) |
| | 14 | SNX1034 | Magnet catch | | | | Shield packing (B) |
| | 15 | DNK1618 | Coin-return door | | | | Coin guide (B) |
| | 16 | DNK1618 | Coin-return hole cover | | | | Coin-return tray |
| | 17 | DNH1335 | Cover of the money storage | | 101 | | |
| | 18 | DNF1258 | Reinforced plate | | 102 | | |
| | 19 | 10-757A | Speaker (Mid-range) | | 103 | | |
| | 20 | D66AP45-52L | Speaker (Tweeter) | | 104 | | |
| | 21 | SMG1169 | Grill | | 105 | | |
| | 22 | YE30FUC | E ring $\phi 3$ | | 106 | | |
| | 23 | DEC1224 | Illumination sheet | | 107 | | |
| | 24 | DKK1006 | Fluorescent lamp socket (upper) | | 108 | | |
| | 25 | DEC1220 | Bushing | | 109 | | |
| | 26 | DEC-176 | Plastic rivet | | 110 | | |
| | 27 | PMH30P060FMC | Screw | | 111 | | |
| | 28 | TNC35P140FZK | Screw | | 112 | | |
| | 29 | SBA1081 | Screw | | 113 | | |
| | 30 | RWC35P160FZK | Screw | | 114 | | |
| | 31 | IPZ30P080FMC | Screw | | 115 | | |
| | 32 | BBZ30P060FMC | Screw | | 116 | | |
| | 33 | DBA1007 | Screw (3.5 \times 12mm) | | 117 | | |
| | 34 | PMB40P080FMC | Screw | | 118 | | |
| | 35 | IPZ30P080FMC | Screw | | 119 | | |
| | 36 | PMG60P100FMC | Screw | | 120 | | |
| | 37 | SNB1039 | Catch plate L | | | | Punching net |
| | 38 | SNB1040 | Catch plate R | | | | Badge |
| | 39 | SNB1041 | Door hinge | | | | Tape A |
| | | | | | | | Grill board |
| | | | | | | | Stopper A |

Parts List

| Mark | No. | Part No. | Description |
|------|-----|--------------|-----------------------------|
| | 1 | DNK1627 | Plate |
| | 2 | SNA1235 | Rail |
| | 3 | 25-803A | Speaker (Woofe) |
| | 4 | DSF1001 | Micro switch |
| | 5 | DBH1125 | O spring |
| | 6 | SNA1220 | Reinforced plate |
| | 7 | DXB1022 | Caster A |
| | 8 | DXB1023 | Caster B |
| | 9 | YE20FUC | E ring $\phi 2$ |
| | 10 | BE230P060FMC | Screw |
| | 11 | AMZ40P080FMC | Screw |
| | 12 | TNC35P140FZK | Screw |
| | 13 | PMH20P100FMC | Screw |
| | 14 | DBA1007 | Screw (3.5 \times 12mm) |
| | 15 | SBA1068 | Screw |
| | 16 | PMB50P300FMC | Screw |
| △ | 17 | SBA-194 | Screw |
| | 18 | DDE1094 | Connection cord |
| | 19 | PDE1065 | Cord with pin plug |
| | 20 | DEC1184 | Shell clip |
| | 21 | YE30FUC | E ring $\phi 3$ |
| | 22 | SNA1224 | Earth plate |
| | 101 | | Top door stay |
| | 102 | | MB fixing plate |
| | 103 | | Door SW cam |
| | 104 | | Door switch holder assembly |
| | 105 | | • • • |
| | 106 | | Cabinet |
| | 107 | | Airway cover |
| | 108 | | Earth Jug assembly |
| | 109 | | Cord clammer |
| | 110 | | R pin |
| | 111 | | Magazine assembly |
| | 112 | | Tape B |

2.1.3 EXTERIOR (3)

Parts List

| Mark | No. | Part No. | Description | Mark | No. | Part No. | Description |
|------|-----|--------------|-----------------------|------|-----|----------|----------------------|
| △ | 1 | DTH1106 | Ballast | | 101 | | LAMP |
| △ | 2 | DKK1001 | Glow lamp socket | | 102 | | Stay A |
| ◎ | 3 | SWN1219 | Network assembly | | 103 | | Glow lamp |
| △ | 4 | REK-103 | Fuse (2A, FU001) | | 104 | | CA holder A |
| | 5 | 10-757A | Speaker (Mid-range) | | 105 | | Hinge holder |
| 6 | | SNB1038 | Speaker holder | | 106 | | Rear plate |
| 7 | | DXB1193 | Hinge | | 107 | | CH lever B |
| 8 | | DEK1015 | Acceptor plate spring | | 108 | | CA holder C assembly |
| 9 | | BBZ30P060FMC | Screw | | 109 | | Edge guard (B) |
| 10 | | DBA1007 | Screw (3.5 × 12mm) | | 110 | | Coin guide cover |
| 11 | | TNC35P140FZK | Screw | | 111 | | Insertion guide |
| 12 | | AYC30P250FMC | Screw | | 112 | | Cord clammer |
| 13 | | AMZ30P060FZK | Screw | | 113 | | HL holder assembly |
| 14 | | BS240P060FZK | Screw | | 114 | | CH lever assembly A |
| 15 | | BBZ40P080FMC | Screw | | 115 | | Bill holder (F) |
| 16 | | BBZ30P080FMC | Screw | | 116 | | Bill holder (L) |
| 17 | | PEZ30P120FMC | Screw | | 117 | | Bill holder (RE) |
| 18 | | DEH1037 | CA spring | | 118 | | Bill holder (R) |
| 19 | | YE30FUC | B ring φ3 | | 119 | | DS shaft A |
| 20 | | IPZ30P080FMC | Screw | | 120 | | DS base |
| 21 | | PMB40P080FMC | Screw | | 121 | | Door stay A |
| 22 | | AMZ40P080FMC | Screw | | 122 | | Cord clammer |
| 23 | | SNC1078 | Protection net | | 123 | | DS shaft B |
| 24 | | DND1022 | Door stay B | | 124 | | Tape C |
| | | | | | 125 | | Tape D |
| | | | | | 126 | | Coin guide (C) |
| | | | | | 127 | | Ornament sash |
| | | | | | 128 | | Shield packing (A) |
| | | | | | 129 | | Cabinet |
| | | | | | 130 | | Coin guide (D) |
| | | | | | 131 | | Key plate (A) |
| | | | | | 132 | | Insulation sheet |

Parts List

| Mark | No. | Part No. | Description | Mark | No. | Part No. | Description |
|------|-----|---------------|--------------------------------------|------|-----|---------------|-----------------------|
| | 1 | DNK1633 | Shaft holder | | 39 | BBZ30P060FMC | Screw |
| | 2 | DNF1257 | Corner edge | | 40 | PMH30P060FMC | Screw |
| | 3 | DNK1629 | Menu cap (L) | | 41 | SMZ30H200FMC | Screw |
| | 4 | DNK1630 | Menu cap (M) | | 42 | BMZ26P060FMC | Screw |
| | 5 | DEC1252 | Menu sheet | | 43 | ZMD26H1030FBT | Screw |
| | 6 | DNK1621 | Worm wheel | | 44 | BPZ30P080FCU | Screw |
| | 7 | DNK1626 | Side ornament plate | | 45 | AMZ23P080FZK | Screw |
| | 8 | DEC1250 | Side ornament plate sheet (L) | | 46 | ZMD40H1080FBT | Screw |
| | 9 | DEC1251 | Side ornament plate sheet (R) | | 47 | DNA1070 | Side frame (L) |
| | 10 | DNK1627 | Ornament plate | | 48 | DNA1071 | Side frame (R) |
| △ | 11 | DEC1224 | Illumination sheet | | 49 | DEL-110 | Fluorescent lamp |
| △ | 12 | DKK1006 | Fluorescent lamp socket (upper L) | ◎ | 50 | DWX1110 | POSS |
| △ | 13 | DKK1007 | Fluorescent lamp socket (under L) | ◎ | 51 | DWX1109 | ROTA |
| | 14 | DEC1220 | Bushing | ◎ | 52 | DWX1132 | CNTB |
| | 15 | DXB-108 | Bearing | | 101 | • • • • | |
| | 16 | DBH1107 | Tension spring (under) | | 102 | • • • • | |
| | 17 | DMS1012 | Synchro belt | | 103 | • • • • | Top cover |
| | 18 | DNK1622 | Center pulley | | 104 | • • • • | |
| | 19 | DNK1623 | Synchro pulley | | 105 | • • • • | |
| | 20 | DBH1108 | Adjustment spring | | 106 | • • • • | Back frame |
| | 21 | DEC-176 | Plastic rivet | | 107 | • • • • | |
| | 22 | VBN-002 | Speed nut | | 108 | • • • • | Reflection plate |
| | 23 | DNK1632 | Menu cap (U) | | 109 | • • • • | Socket holder (L) |
| | 24 | DNK1628 | Menu | | 110 | • • • • | Socket holder (S) |
| | 25 | DLA1300 | Worm gear | | 111 | • • • • | Lamp plate (L) |
| | 26 | DNK1620 | Pulley | | 112 | • • • • | Lamp plate (R) |
| | 27 | DNK1624 | Worm shaft holder | | 113 | • • • • | Tension plate (under) |
| | 28 | DMS1006 | S2M timing belt | | 114 | • • • • | Under frame |
| | 29 | DXB1160 | Encoder disc assembly | | 115 | • • • • | Adjustment plate |
| | 30 | DXM1033 | Motor | | 116 | • • • • | |
| | 31 | DXXI368 | Motor assembly | | 117 | • • • • | Cord clamer |
| | 32 | CEANP010M50 | C702,C704 | | 118 | • • • • | Triangle frame (L) |
| | 33 | CGDYXJ04M25 | C701,C703 | | 119 | • • • • | Triangle frame (S) |
| | 34 | WA42D060D050 | Washer | | 120 | • • • • | Motor holder |
| | 35 | BBZ30P080FZK | Screw | | 121 | • • • • | Sensor holder |
| | 36 | BBZ40F080FMC | Screw | | 122 | • • • • | Motor pulley |
| | 37 | ZMD40H1080FBT | Screw | | | | |
| | 38 | SMZ30H120FBT | Screw | | | | |

2.1.5 AMP SECTION

Parts List

| Mark | No. | Part No. | Description | Mark | No. | Part No. | Description |
|------|-----|--------------|--------------------------------------|------|-----|----------|--------------------|
| ◎ | 1 | DWR1078 | POWB | | 101 | | ACIN |
| ◎ | 2 | DWK1013 | PREB | | 102 | | WBFT |
| ◎ | 3 | DWH1007 | PAMP | | 103 | | PSWB |
| △ | 4 | REK-100 | Fuse (1A, FU1, FU6, FU701, FU702) | | 104 | | • • • |
| △ | 5 | REK-102 | Fuse (1.6A, FU3, FU4) | | 105 | | SPTB |
| △ | 6 | REK-104 | Fuse (2.5A, FU5) | | 106 | | IOJB |
| △ | 7 | DTT1048 | Main power transformer | | 107 | | Side frame L |
| △ | 8 | AKP-502 | 3P AC outlet | | 108 | | Side frame R |
| △ | 9 | DDG1041 | AC power cord | | 109 | | Center frame |
| △ | 10 | CM-22B | Strain relief | | 110 | | Front panel A |
| | 11 | RAC1210 | VR knob A | | 111 | | Protector |
| | 12 | RAC1211 | VR knob B | | 112 | | Wire clip |
| | 13 | DLA-177 | Staddle | | 113 | | Transformer frame |
| | 14 | DAC1107 | Push knob | | 114 | | Cord clamer |
| | 15 | BEZ30P060FMC | Screw | | 115 | | Rear panel A |
| | 16 | BEZ30P050FZK | Screw | | 116 | | P.C.B. stopper |
| | 17 | BEZ40P050FMC | Screw | | 117 | | Heat sink |
| | 18 | BEZ30P140FMC | Screw | | 118 | | PF holder |
| | 19 | PMB40P080FMC | Screw | | 119 | | Connector assembly |
| | 20 | AMZ30P080FZK | Screw | | 120 | | Connector assembly |
| △ | 21 | DTT1049 | Sub power transformer | | 121 | | Earth terminal |
| ◎ | 22 | DWS1107 | ASEL | | 122 | | PSEL |
| ◎ | 23 | DNK1893 | Terminal cover | | 123 | | • • • |
| ◎ | 24 | DWK1014 | BGMB | | 124 | | Terminal holder |
| | | | | | 125 | | P.C.B. holder B |
| | | | | | 126 | | Spacer |

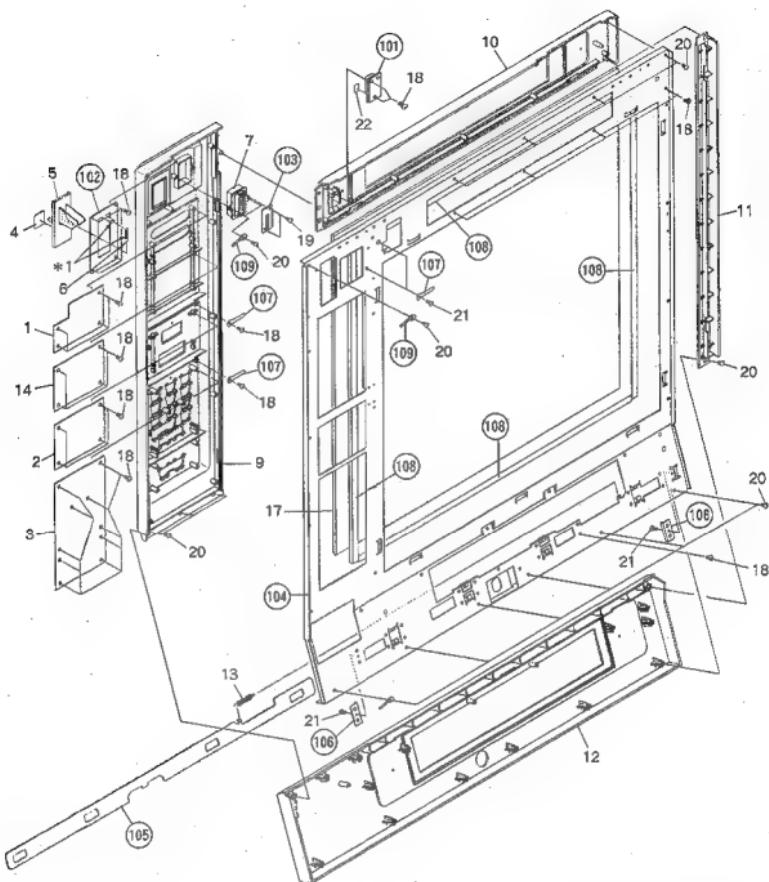
Parts List

| Mark | No. | Part No. | Description |
|------|-----|--------------|-------------------------|
| ▲ | 1 | | • • • • |
| | 2 | DEM1001 | Lithium batteries |
| | 3 | DAW1011 | Electromagnetic counter |
| | 4 | DAC-116 | Push button |
| | 5 | | • • • • |
| | 6 | BBZ30P060FZK | Screw |
| | 7 | BBZ30P060FMC | Screw |
| | 8 | PMB30P060FCU | Screw |
| | 101 | | RSSB |
| | 102 | | CRJB |
| | 103 | | OPER. |
| | 104 | | WBJB |
| | 105 | | RMJB |
| | 106 | | Front panel B |
| | 107 | | P.C.B. holder A |
| | 108 | | Counter holder |
| | 109 | | P.C.B. holder |
| | 110 | | Side frame L |
| | 111 | | Side frame R |
| | 112 | | Reinforced frame |
| | 113 | | Rear panel H |
| | 114 | | Cushion |
| | 115 | | CONT |
| | 116 | | Bolt |
| | 117 | | Cord clamper E |
| | 118 | | Cord clamper |
| | 119 | | P.C.B. holder C |
| | 120 | | Terminal holder |
| | 121 | | Terminal holder |
| | 122 | | Terminal holder C |

2.1.7 TOP DOOR SECTION

Parts List

| Mark | No. | Part No. | Description | Mark | No. | Part No. | Description |
|------|---------|-----------------|--------------------------|------|-----|----------|---------------------|
| ◎ | 1 | DWG1128 | MESS | | 101 | | SENS |
| ◎ | 2 | DWG1129 | DISP | | 102 | | Coin-return lever |
| ◎ | 3 | DWS1101 | KEYB | | | | fixing plate |
| | 4 | DAH1184 | Coin-return lever sheet | | 103 | | Coin slit |
| | 5 | DAD1001 | Coin-return lever | | 104 | | Top door base |
| | 6 | DBH1033 | Coin-return lever spring | | 105 | | Top door lock plate |
| | 7 | DNS1044 | Coin insertion hole | | | | |
| ■ | 8 | | • • • | | 106 | | Lock plate stopper |
| 9 | DNK1609 | Operation panel | | | 107 | | Cord clammer |
| | 10 | DNK1610 | Top door panel (upper) | | 108 | | Glass sash |
| ◎ | 11 | DNK1612 | Top door panel (side) | | 109 | | Earth lug assembly |
| | 12 | DNK1737 | Top door panel (under) | | | | |
| | 13 | DBH1034 | Lock spring | | | | |
| ◎ | 14 | DWX1108 | BRAN | | | | |
| | 15 | | • • • | | | | |
| | 16 | | • • • | | | | |
| △ | 17 | DAN1010 | Menu glass | | | | |
| | 18 | BPZ30P080PCU | Screw | | | | |
| | 19 | PMH80P120FMC | Screw | | | | |
| | 20 | IPZ30P080FMC | Screw | | | | |
| | 21 | BBZ30P080FMC | Screw | | | | |
| | 22 | DEC1356 | IR filter | | | | |



*1 : Silicon Adhesive GYL-014

2.2 CD SECTION

2.2.1 EXTERIOR

Parts List

| Mark | No. | Part No. | Description | Mark | No. | Part No. | Description |
|------|-----|--------------|--------------------------|------|-----|----------|--------------------|
| | 1 | DNE1083 | Bonnet | | 101 | | Insulation plate B |
| | 2 | DXX1357 | Bonnet assembly | | 102 | | HRMB |
| | 3 | DRW1151 | Label A | | 103 | | EKEY |
| | 4 | DNB1012 | Front panel | | 104 | | RMJB |
| | 5 | VCX-006 | Hour meter | | 105 | | DIAK |
| △ | 6 | DAC1196 | Push button | | 106 | | PJAK |
| △ | 7 | DTT1047 | Power transformer (T201) | | 107 | | Chassis |
| △ | 8 | REK-094 | Fuse (250mA, FU201) | | 108 | | Upper base |
| ◎ | 9 | DWX1155 | ANLG | | 109 | | Under base |
| | 10 | DEC-176 | Plastic rivet | | 110 | | Slipping angle |
| | 11 | RNH-184 | Cord clammer | | 111 | | Jack holder |
| | 12 | DLA1336 | Collar | | 112 | | Insulation sheet |
| | 13 | DNK1179 | SP holder | | | | |
| | 14 | DNF1075 | Plate B | | | | |
| | 15 | DBH1106 | Spring | | | | |
| △ | 16 | DDG1038 | AC power cord | | | | |
| | 17 | | • • • | | | | |
| | 18 | DLA1337 | Lock shaft | | | | |
| | 19 | DEB1123 | Rubber washer | | | | |
| | 20 | BBZ30P060FMC | Screw | | | | |
| | 21 | PMZ30P040FMC | Screw | | | | |
| | 22 | IPZ30P060FMC | Screw | | | | |
| | 23 | AMZ30P060FMC | Screw | | | | |
| | 24 | FMZ30P060FMC | Screw | | | | |
| | 25 | FDZ30P050FMC | Screw | | | | |
| | 26 | BBZ40P060FMC | Screw | | | | |
| | 27 | AMZ40P250FMC | Screw | | | | |
| | 28 | DDI1027 | 17P flexible cord | | | | |
| | 29 | CM-22B | Strain relief | | | | |

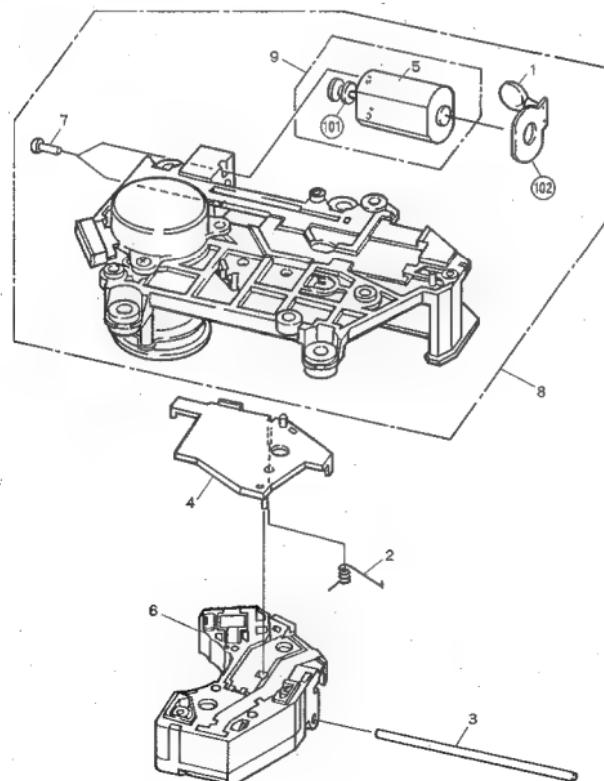
Parts List

| Mark | No. | Part No. | Description | Mark | No. | Part No. | Description |
|------|-----|--------------|---------------------------|------|-----|--------------------|--------------------------|
| 1 | | DNK1566 | Lock lever | 51 | | BMZ26P120FMC | Screw |
| 2 | | DXP1008 | Plunger | 52 | | PCZ30P050FZK | Screw |
| 3 | | DBH1101 | Lock spring | 53 | | DBA1023 | Link screw |
| 4 | | PBH1015 | SM spring | 54 | | PBA1002 | Floating screw |
| 5 | | DBK1028 | Spring | 55 | | PBA-125 | Screw |
| 6 | | REC1005 | Damper assembly | 56 | | WT26D047D050 | Washer |
| 7 | | PBH-456 | Eject spring | 57 | | WT26D047D025 | Washer |
| 8 | | DMS1011 | Timing belt | 58 | | WA31D054D050 | Washer |
| 9 | | DNK1578 | Timing pulley | 59 | | WA31D054D025 | Washer |
| 10 | | DNK1575 | Gear E2 | 60 | | YE25PUC | E ring |
| 11 | | DSH1011 | Slide switch | 61 | | WT31D054D050 | Washer |
| 12 | | PXM1002 | Motor (SELECT, LOADING) | 62 | | DXX1358 | Select motor assembly |
| 13 | | DBH1100 | Select spring | 63 | | DXP1009 | Solenoid |
| 14 | | DNK1579 | Select lever | 64 | | BMZ26P030FMC | Screw |
| 15 | | DBH1102 | Sensor spring | 65 | | WT31D054D025 | Washer |
| 16 | | RNH-184 | Cord clammer | 66 | | ZMD26H040FBT | Screw |
| 17 | | DWX1116 | DEGT | 67 | | DXB1189 | Servo mechanism assembly |
| 18 | | DEC1237 | Sheet | 101 | | MJSW | |
| 19 | | PNW1110 | Cam | 102 | | Side guide L | |
| 20 | | PNW1111 | Upper tray | 103 | | SM select A | |
| 21 | | PED1001 | Cushion A | 104 | | Top guide | |
| 22 | | DNK1561 | Clammer holder B | 105 | | Side guide R | |
| 23 | | DNS1080 | Synchro gear | 106 | | Center guide | |
| 24 | | DNK1577 | Turn drive lever | 107 | | Eject lever | |
| 25 | | DNK1574 | Clammer cam | 108 | | SM select ■ | |
| 26 | | PYY1025 | Motor assembly | 109 | | Bottom guide | |
| 27 | | DNK1578 | Clammer lever | 110 | | Guide bar | |
| 28 | | DSK1001 | Lever switch(S1001,CLAMP) | 111 | | Gear EF | |
| 29 | | DNK1569 | Gear A | 112 | | Gear angle | |
| 30 | | DNK1570 | Gear ■ | 113 | | Motor base | |
| 31 | | DEB1104 | Belt | 114 | | Sensor holder | |
| 32 | | PNW1095 | Gear pulley | 115 | | REJC | |
| 33 | | PBH1015 | Clammer spring T | 116 | | Sensor plate | |
| 34 | | DBH1120 | Clammer spring B | 117 | | Main chassis | |
| 35 | | DNK1572 | Drive plate | 118 | | FREC | |
| 36 | | DNK1571 | Drive lever | 119 | | Insulation plate A | |
| 37 | | PBP-001 | Steel ball ø4 | 120 | | Card edge spacer | |
| 38 | | DBH1103 | Tension spring | 121 | | Corner post | |
| 39 | | DNK1568 | Main gear | 122 | | SENS | |
| 40 | | PNW1107 | Clammer holder T | 123 | | • • • | |
| 41 | | PBP-009 | Steel ball ø3 | 124 | | Upper chassis | |
| 42 | | PNW1857 | Clammer | 125 | | Rubber tube | |
| 43 | | DLA1286 | Roller | 126 | | Synchro shaft | |
| 44 | | PEB1014 | Floating rubber | 127 | | Sub chassis | |
| 45 | | DEC-176 | Plastic rivet | 128 | | Hold plate | |
| 46 | | BPZ26P080FZK | Screw | 129 | | Link plate | |
| 47 | | BPZ30P100FMC | Screw | 130 | | Link L | |
| 48 | | BSZ26P040FMC | Screw | 131 | | Link R | |
| 49 | | PMZ22P030FMC | Screw | 132 | | Motor pulley | |
| 50 | | PMZ22P080FMC | Screw | 133 | | Motor pulley | |

2.2.3 SERVO MECHANISM SECTION

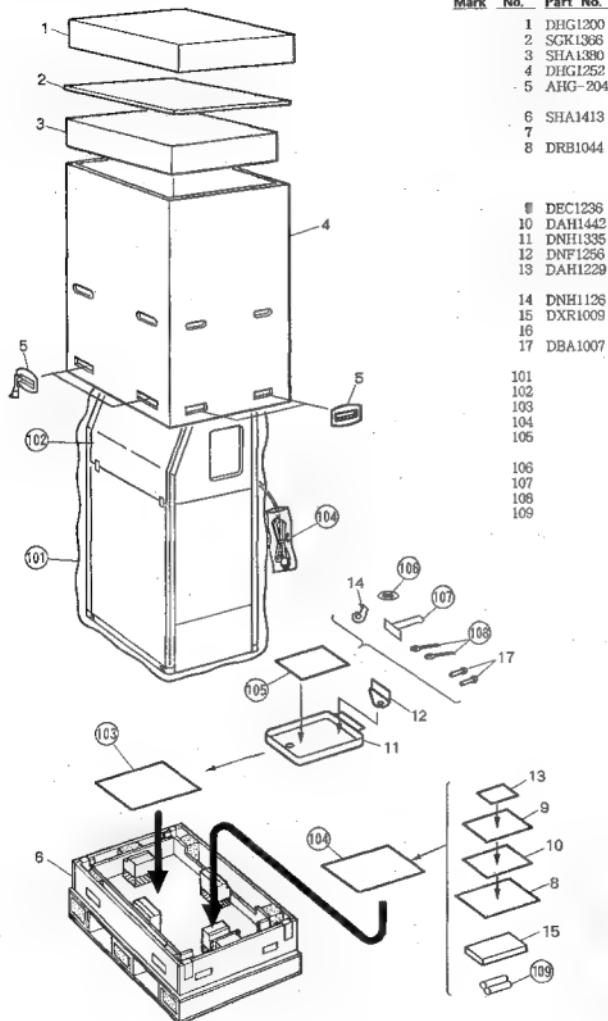
Parts List

| Mark | No. | Part No. | Description |
|------|-----|--------------|----------------------------------|
| 1 | | CGDYX104M25 | Semiconductive ceramic capacitor |
| 2 | | PEH1008 | Drive spring |
| 3 | | PLA1004 | Guide bar |
| 4 | | PNW1063 | Carriage plate |
| 5 | | PXM1002 | Motor |
| 6 | | PWY1009 | Pickup assembly |
| 7 | | PMZ20P030FMC | Screw |
| 8 | | DXX1361 | Spindle motor assembly |
| 9 | | FYY1025 | Motor assembly |
| 101 | | | Motor pulley |
| 102 | | | Carriage M board |



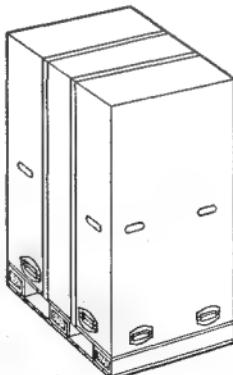
3. PACKING

3.1 MAIN SECTION



Parts List

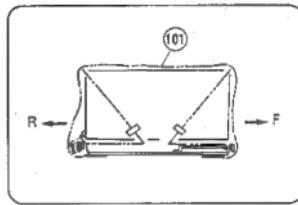
| Mark | No. | Part No. | Description |
|------|---------|---|-------------|
| 1 | DHG1200 | Packing cap | |
| 2 | SGK1366 | Reinforced plate | |
| 3 | SHA1390 | Pad assembly B | |
| 4 | DHG1252 | Packing case | |
| 5 | AHG-204 | PP joint | |
| 6 | SHA1413 | Pad assembly A | |
| 7 | • • • | Operating instructions (English/French/German/ Italian/Spanish) | |
| 8 | DRB1044 | Menu number label | |
| | DAH1442 | Rate seal A | |
| 10 | DNH1335 | Cover of the money storage | |
| 11 | DNF1256 | Reinforced plate | |
| 12 | DAH1229 | Coin sheet | |
| 13 | DEC1236 | Lock release plate | |
| 14 | DNH1126 | Remote control unit | |
| 15 | DXR1009 | • • • | |
| 16 | DBA1007 | Screw | |
| 101 | 101 | Packing bag | |
| 102 | 102 | Packing sheet | |
| 103 | 103 | Vinyl bag | |
| 104 | 104 | Vinyl bag | |
| 105 | 105 | Vinyl bag | |
| 106 | 106 | Blind plate | |
| 107 | 107 | Cord clammer | |
| 108 | 108 | Cord clammer | |
| 109 | 109 | Battery UM-4 | |



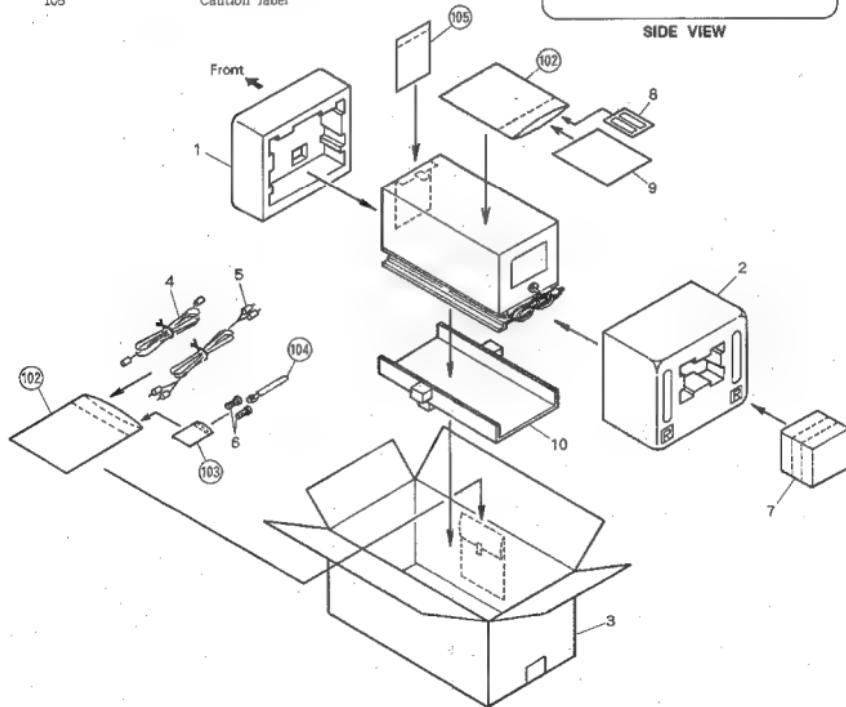
3.2 PACKING OF PD-MV55

Parts List

| Mark | No. | Part No. | Description |
|------|--------------|---|-------------|
| 1 | DHA1086 | F pad | |
| 2 | DHA1087 | R pad | |
| 3 | DHG1223 | Packing case | |
| 4 | DDE1034 | Connection cord | |
| 5 | PDE1065 | Connection cord with pin plug | |
| 6 | AMZ40P080PMC | Screw | |
| 7 | DHG1164 | Case | |
| 8 | DRW1156 | Label B | |
| 9 | DRB1042 | Operating instructions (English/French/German /Italian/Spanish) | |
| 10 | DHC1015 | Reinforcement plate | |
| 101 | | Packing sheet | |
| 102 | | Vinyl bag | |
| 103 | | Vinyl bag | |
| 104 | | Cord clammer | |
| 105 | | Caution label | |



SIDE VIEW



1

2

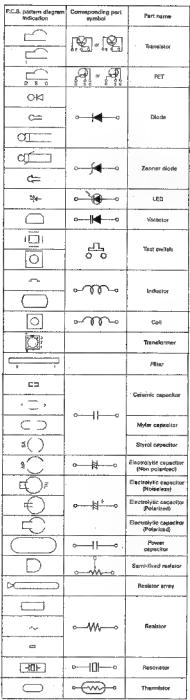
8

6

POINT

| | | | | | | |
|----------|---------|-----|---------|-------------|---------|-----|
| Q56-Q57 | IC19 | Q1 | IC22 | IC5 | | |
| Q48-Q50 | | Q7 | Q51-Q55 | Q43 | Q36-Q37 | IC6 |
| IC20IC17 | Q91-Q96 | IC7 | IC13 | IC8 Q84-Q88 | IC10 | IC4 |

A



1. This P.C.B. connection diagram is viewed from the parts mounted side.

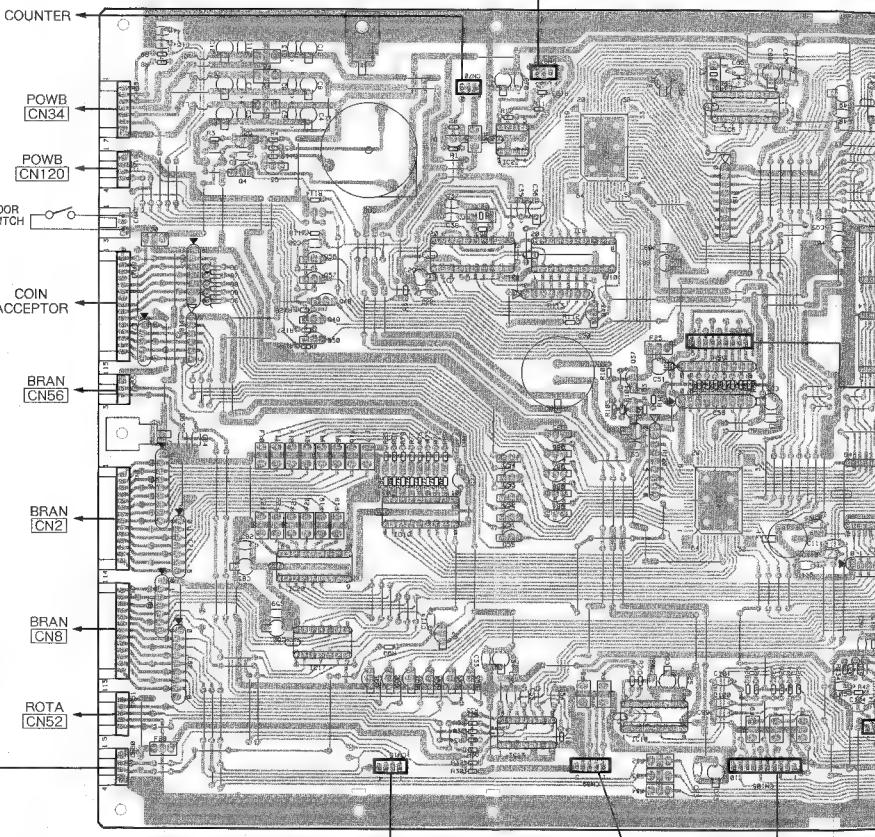
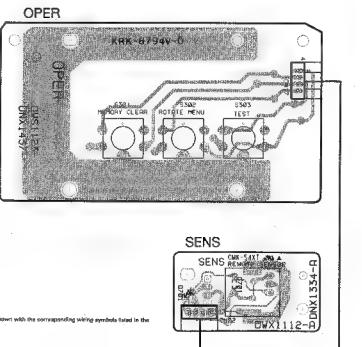
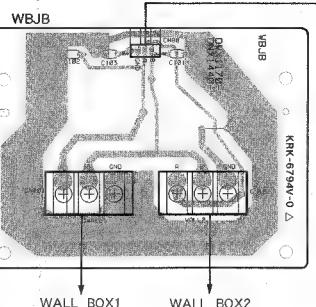
2. The parts which have been mounted on the board can be replaced with those above Table.

3. The capacitor terminal marked with shows negative terminal.
4. The diode marked with  shows anode side.

4. The electrode marked with \odot shows anode side.
 5. The anode terminal marked with \square shows anode.

• The following table summarizes the results of the experiments.

1



1

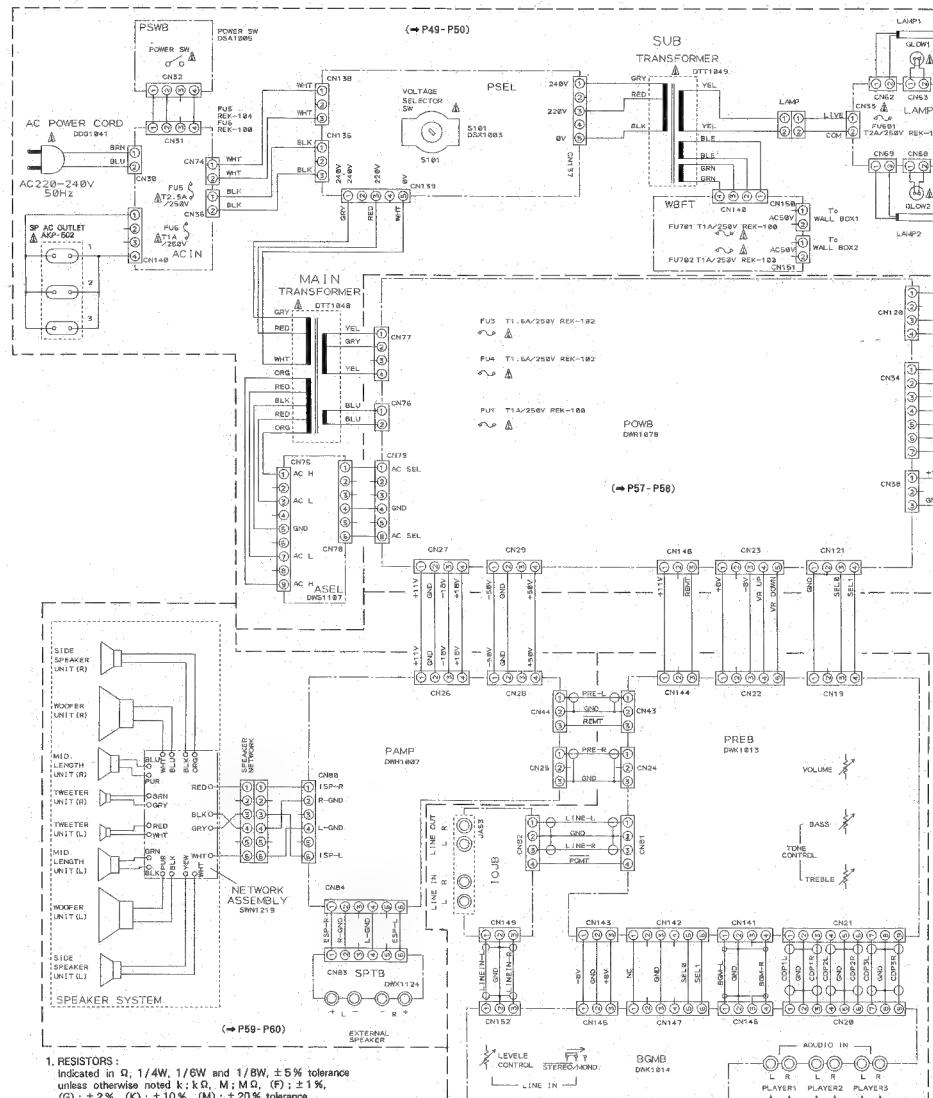
2

3

4. SCHEMATIC DIAGRAMS AND P.C. BOARDS PATTERN

4.1 MAIN SECTION

4.1.1 OVERALL CONNECTION DIAGRAM



1. RESISTORS :

Indicated in Q, 1/4W, 1/6W and 1/8W, $\pm 5\%$ tolerance unless otherwise noted: k, k₀, M, 1M₀, (F) : $\pm 1\%$, (G) : $\pm 2\%$, (K) : $\pm 10\%$, (M) : $\pm 20\%$ tolerance.

2. CAPACITORS :

Indicated in capacity (μ F) / voltage (V) unless otherwise noted p, p₀, p₁. Indication without voltage is 50V except electrolytic capacitor.

3. VOLTAGE, CURRENT :

— : DC voltage (V) at play state.

↔mA : DC current at play state.

Value in () is DC current at stop state.

4. OTHERS :

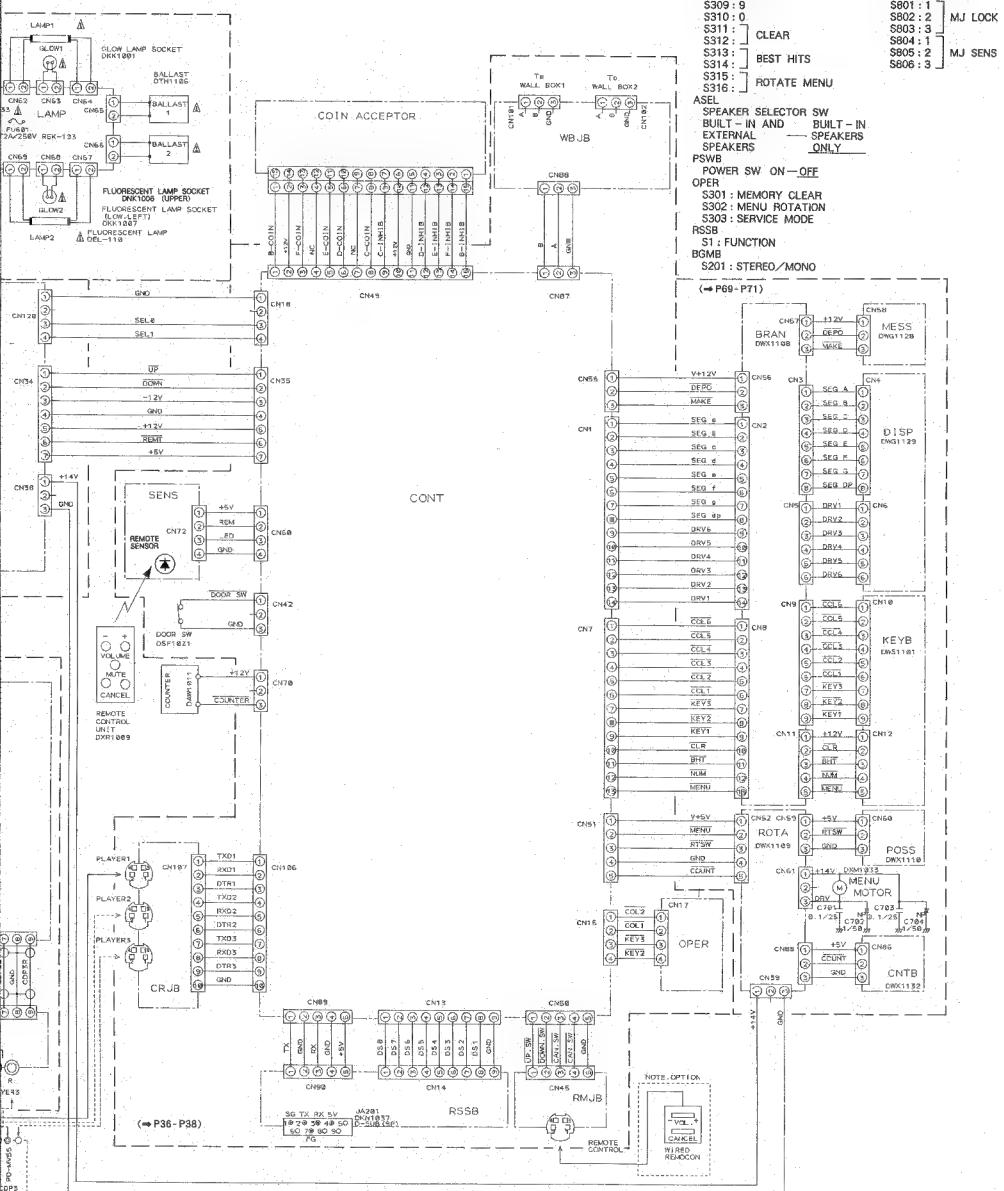
→ : Signal route.

◎ : Adjusting point.

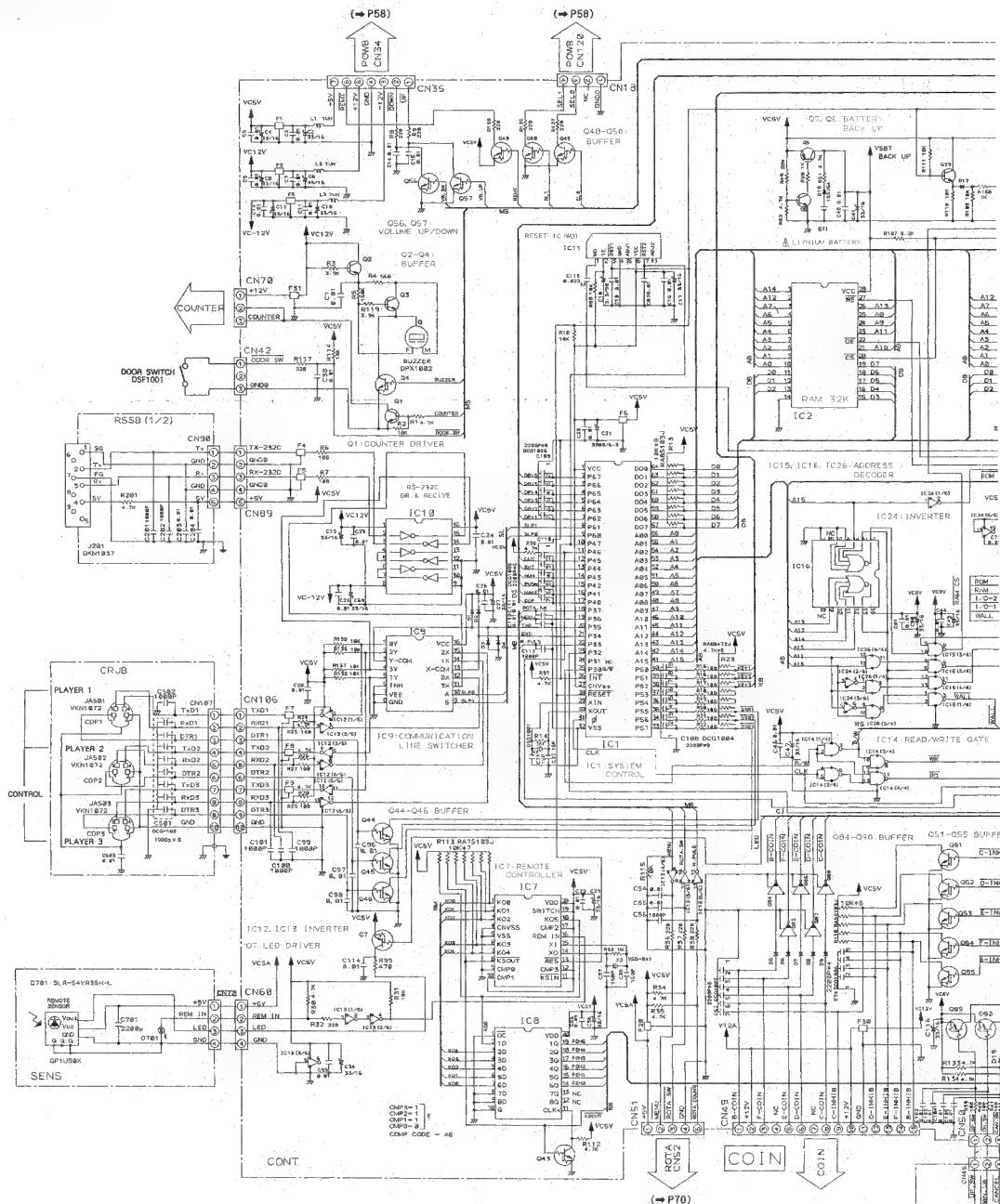
The Δ mark on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

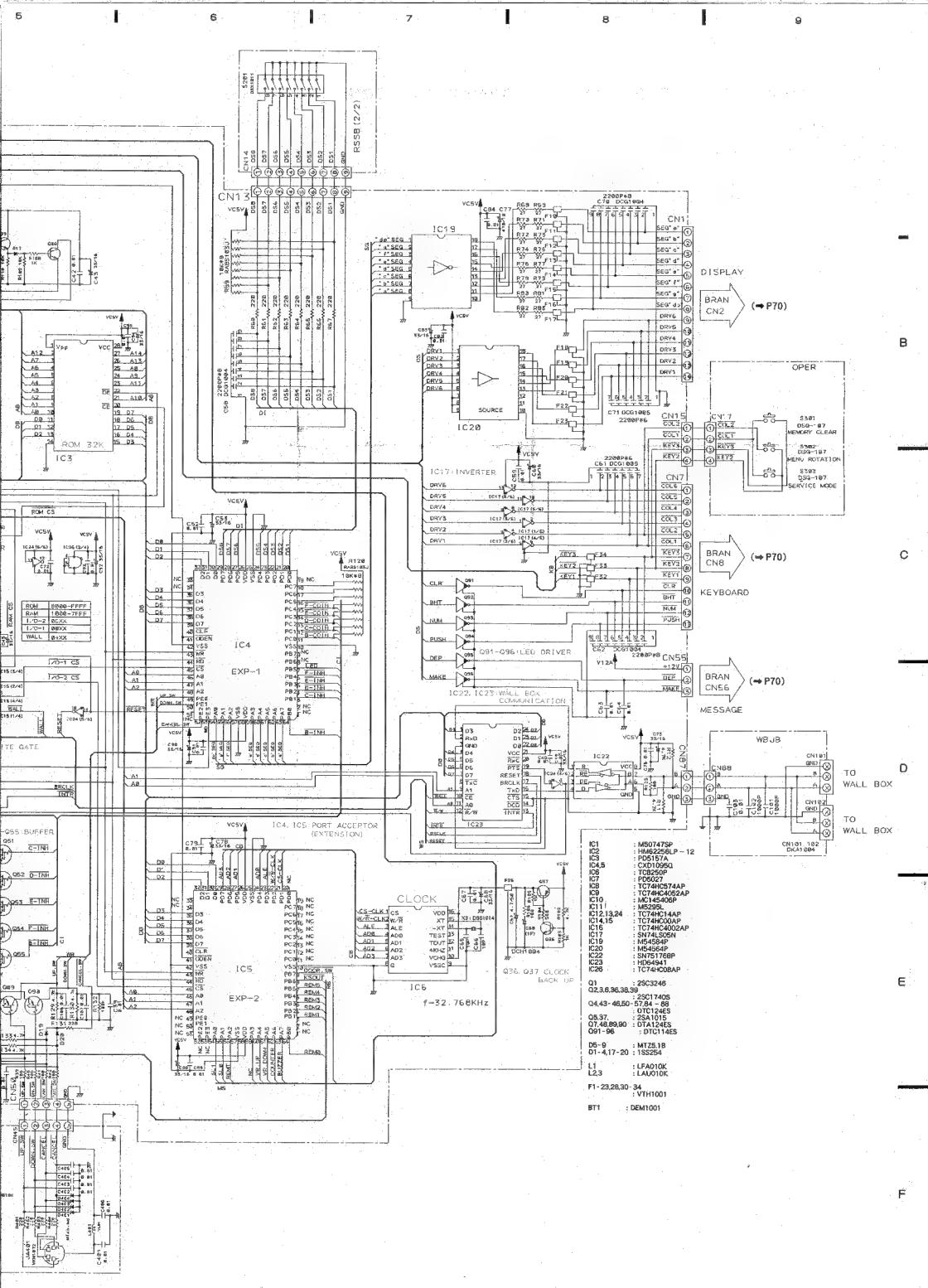
* marked capacitors and resistors have parts numbers.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.



4.1.2 RSSB, CRJB, SENS, CONT, RMJB, OPER AND WBJB





4

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CONT

056-057. 048-050. 1C19 Q1
Q2-04 1C20-017 Q91-Q96 IC7
IC22 Q31-Q55 IC3 Q43
ICB Q84-Q86 Q36-037 IC10
IC4 Q6 IC4

IC23 IC1-IC5 IC26 IC24
Q90-Q99 IC9 IC14-IC16 IC11
IC12 Q5-Q8 Q44-Q46

COUNTER

POWB
[CN34]POWB
[CN120]OR
TCHCOIN
CCEPTORBRAN
[CN56]BRAN
[CN2]BRAN
[CN8]ROTA
[CN52]CONT DNP1262-B
DWG1177

4

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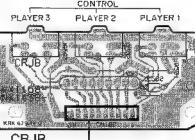
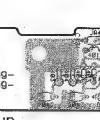
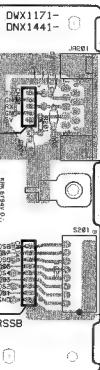
7

8

9

41

RSSB



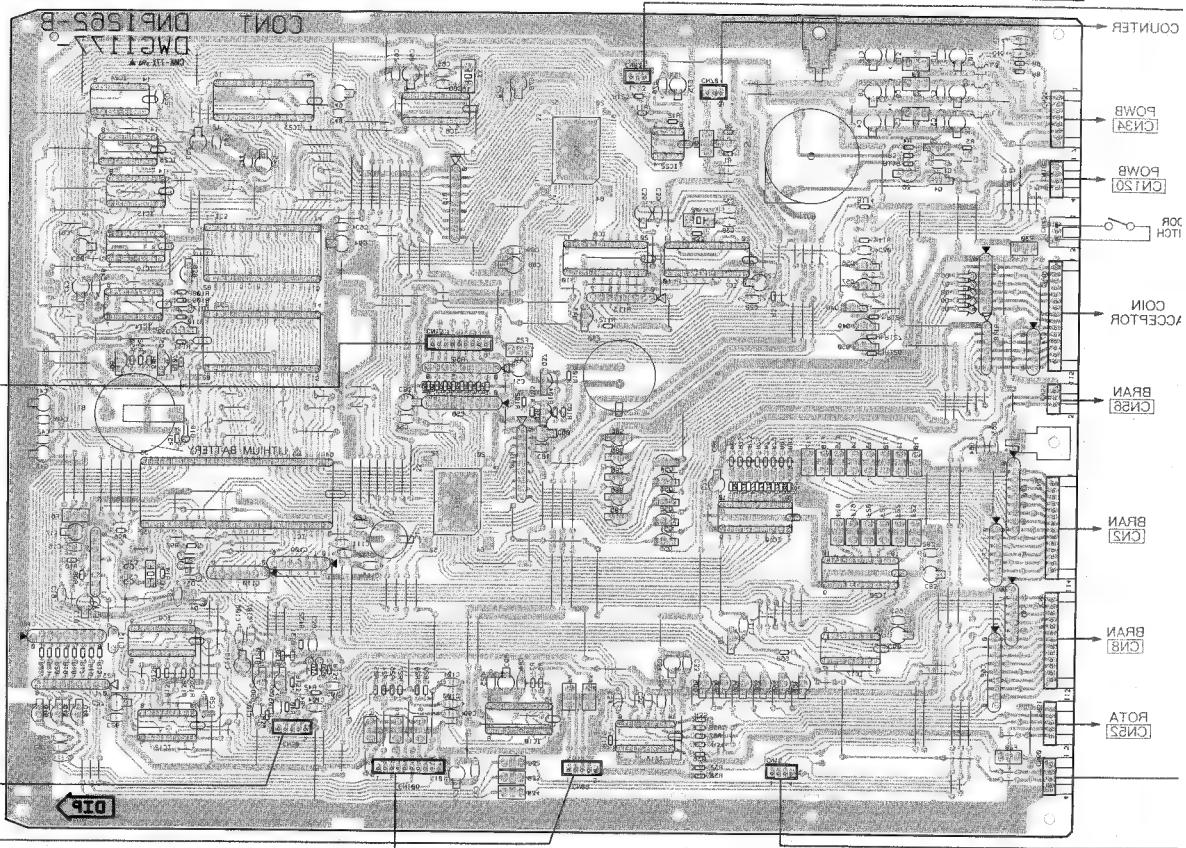
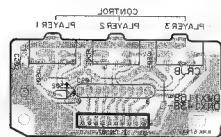
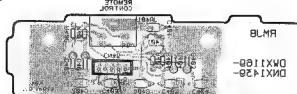
A

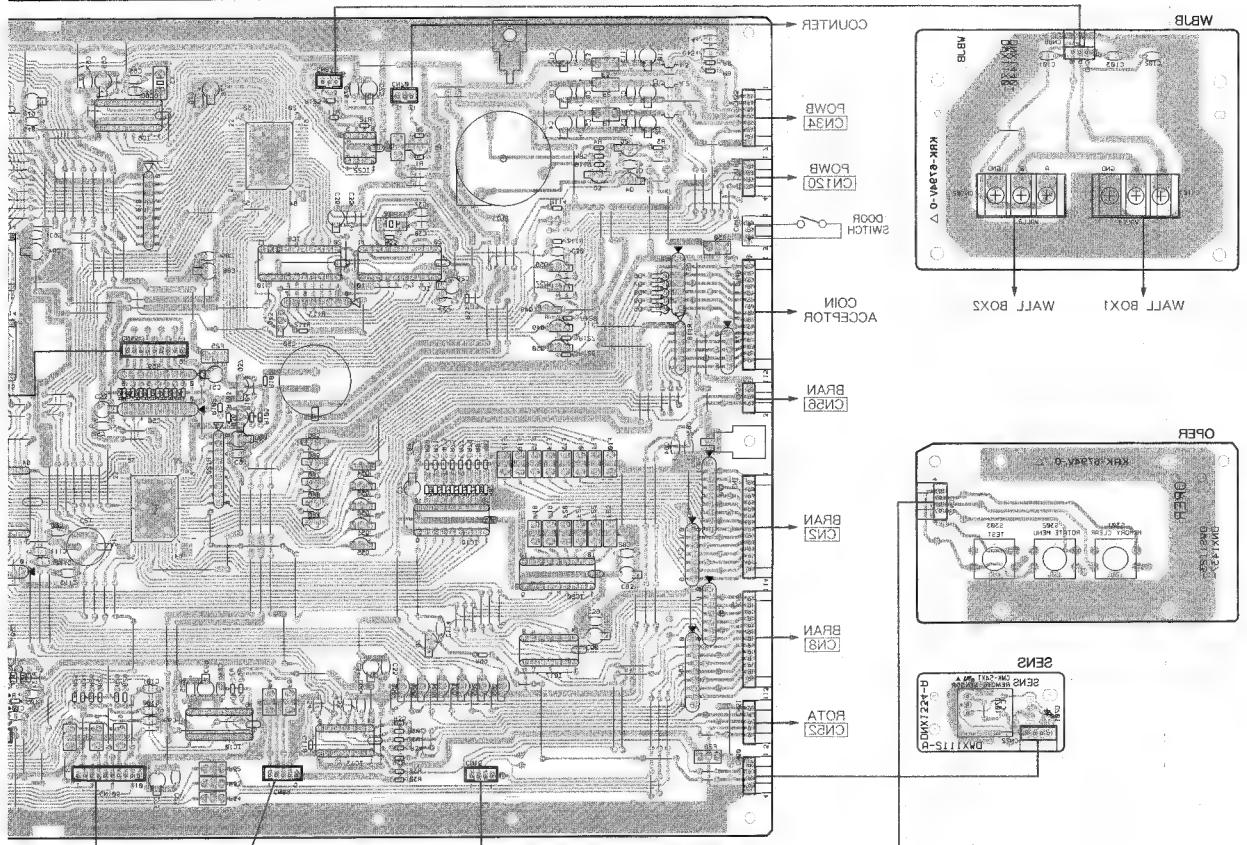
B

C

D

This P.C.B. connection diagram is viewed from the foil side.





CONT

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2

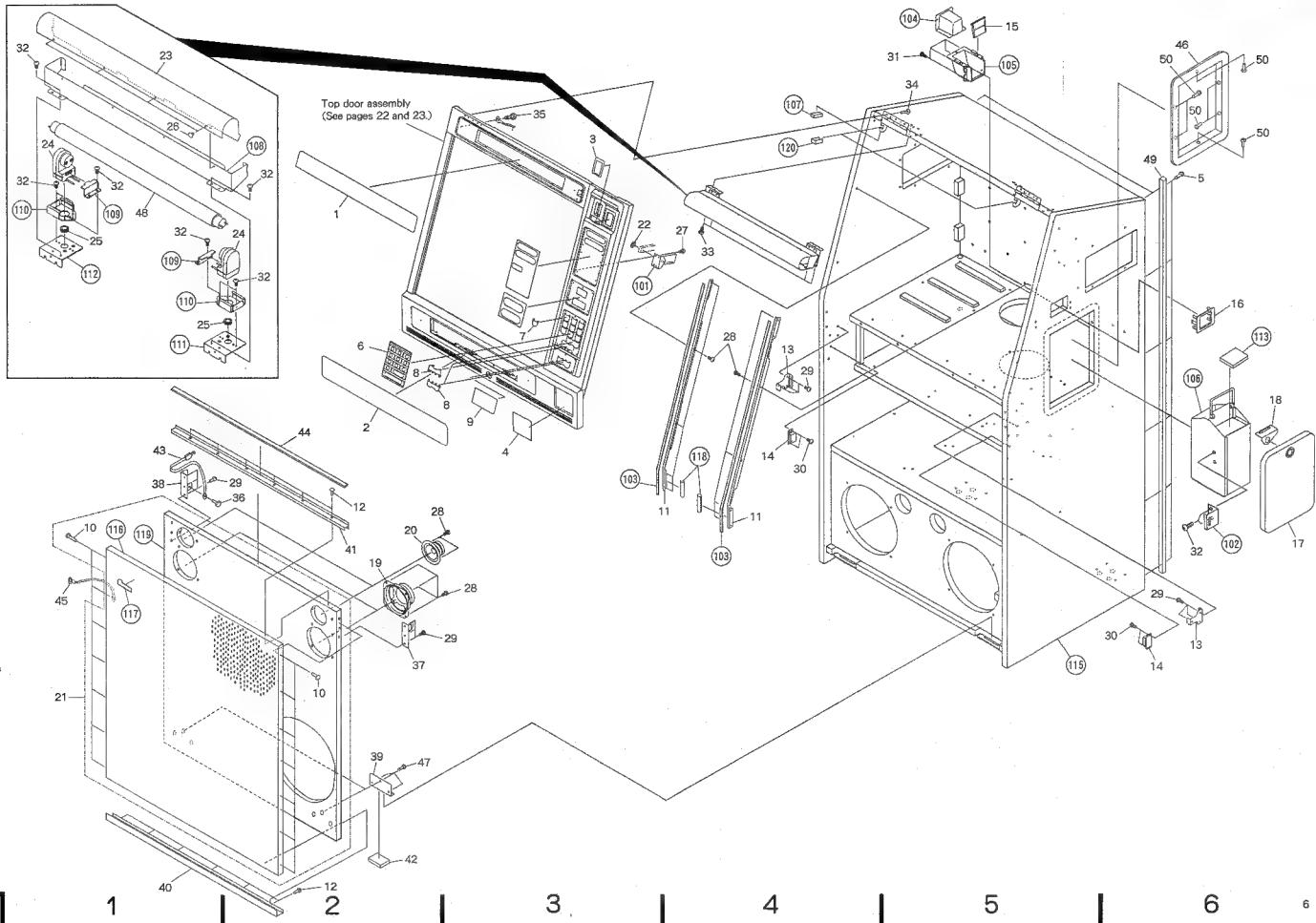
1

A

8

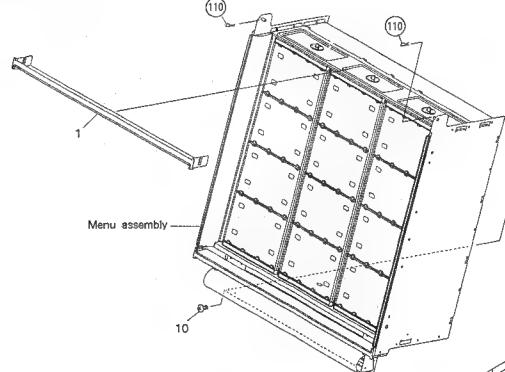
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6

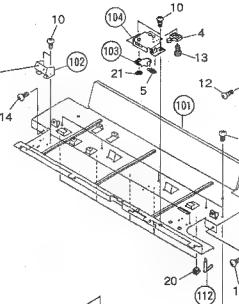


2.1.2 EXTERIOR (2)

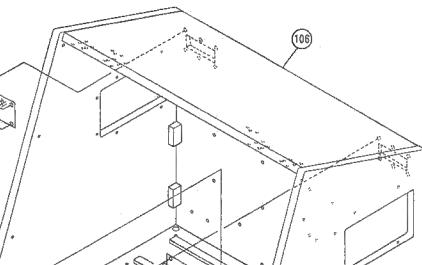
A



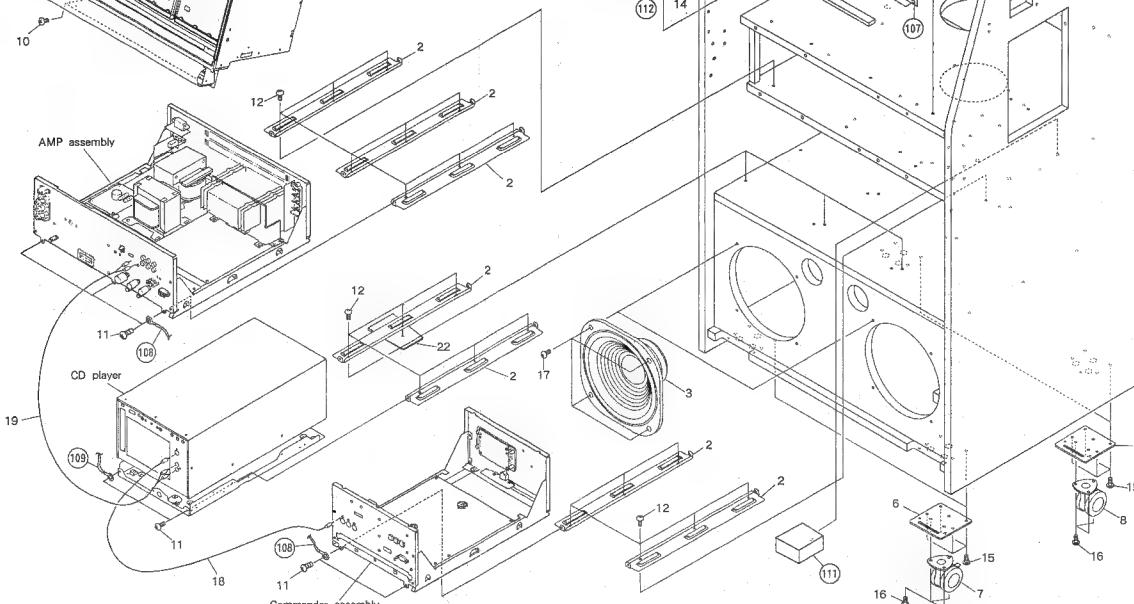
B



C



D



1

2

3

4

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6

A

B

C

D

1

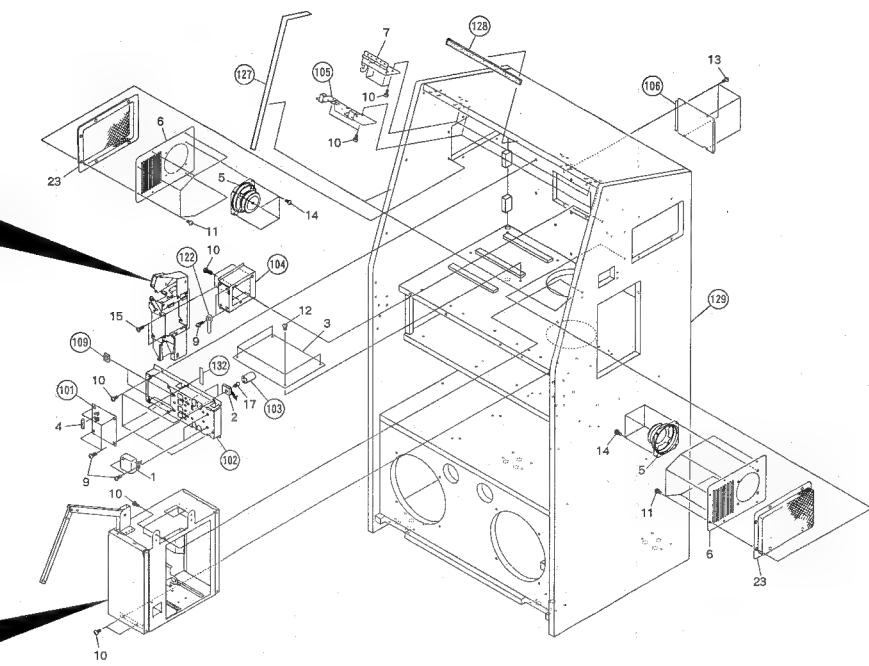
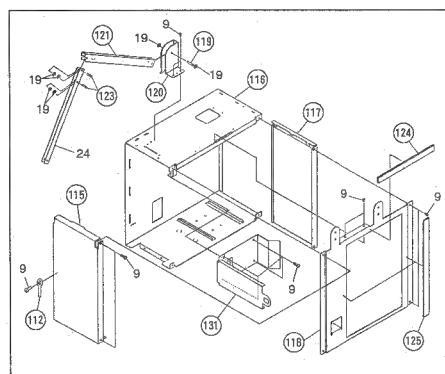
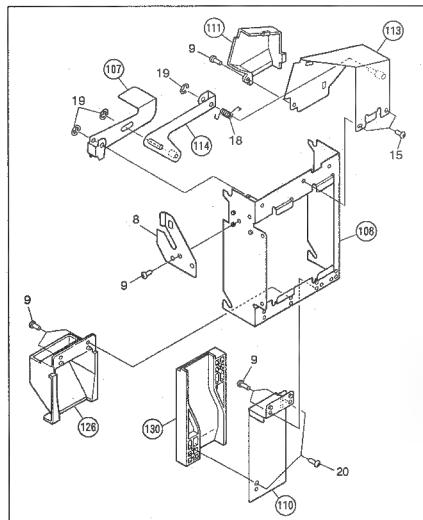
2

3

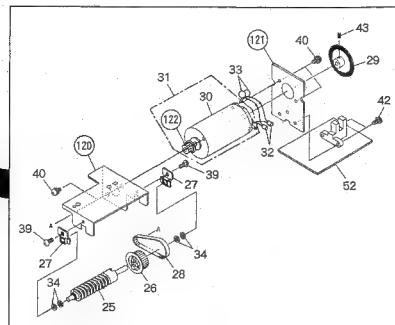
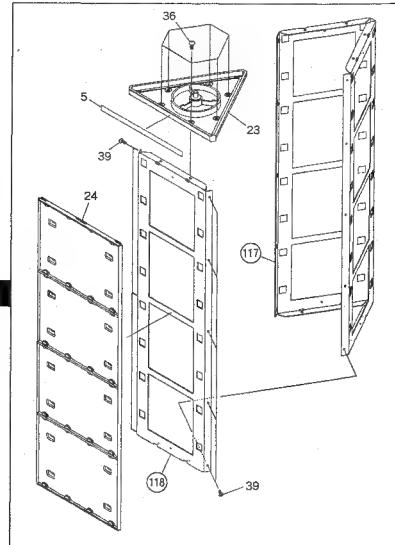
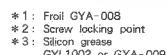
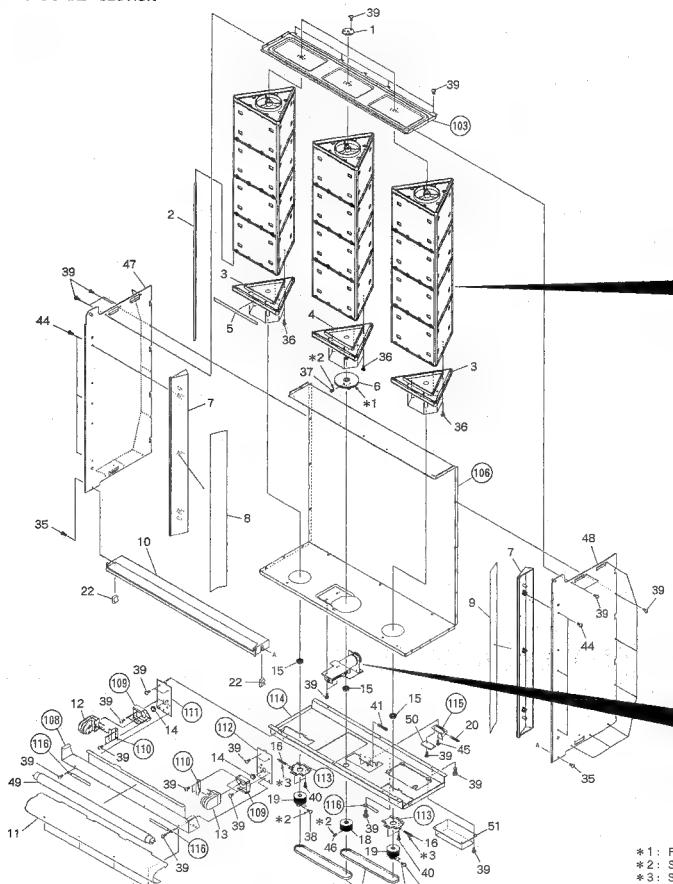
4

5

6



2.1.4 MENU BOARD SECTION



1

2

3

4

5

6

A

A

B

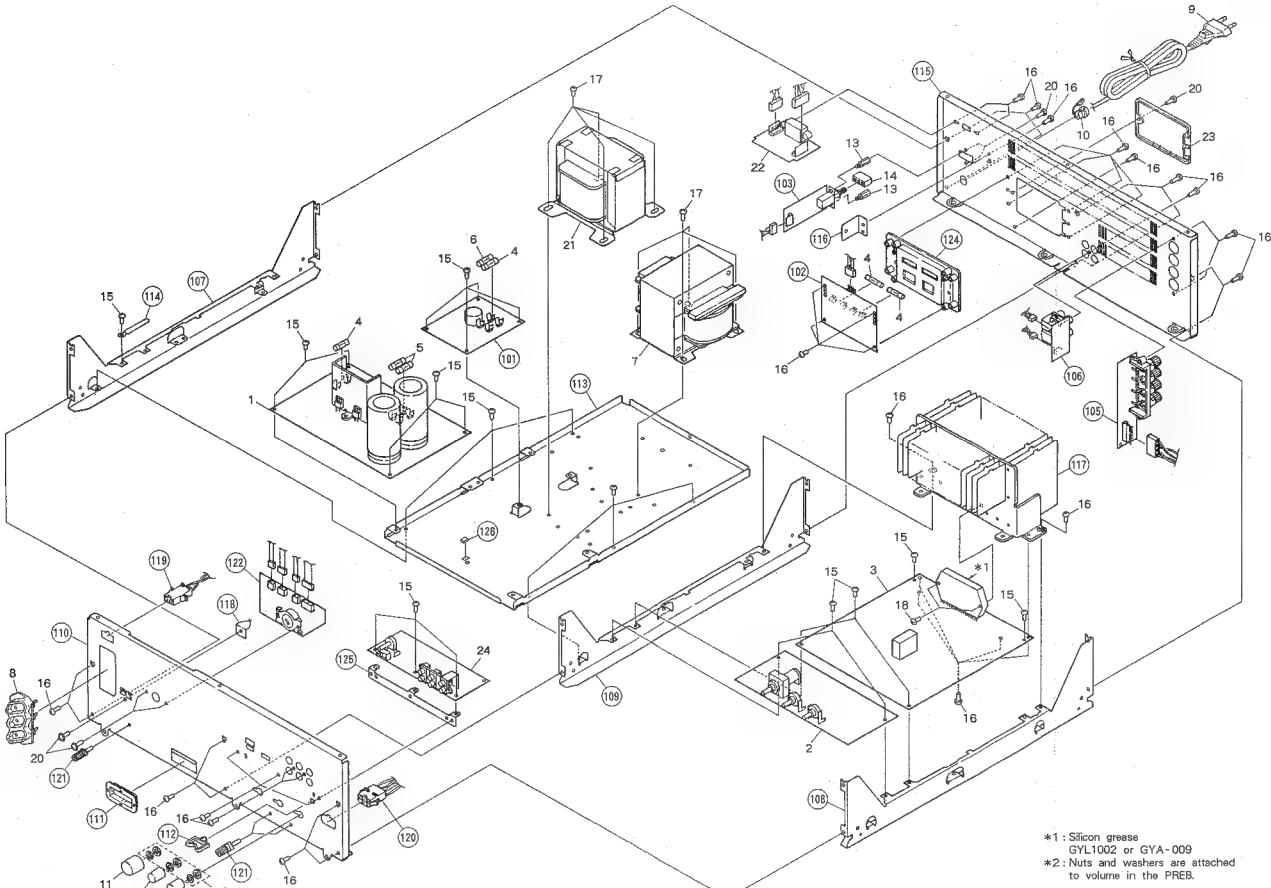
B

C

C

D

D



*1 : Silicon grease
 GYL1002 or GYA-009
 *2 : Nuts and washers are attached to volume in the PREB.

1

2

3

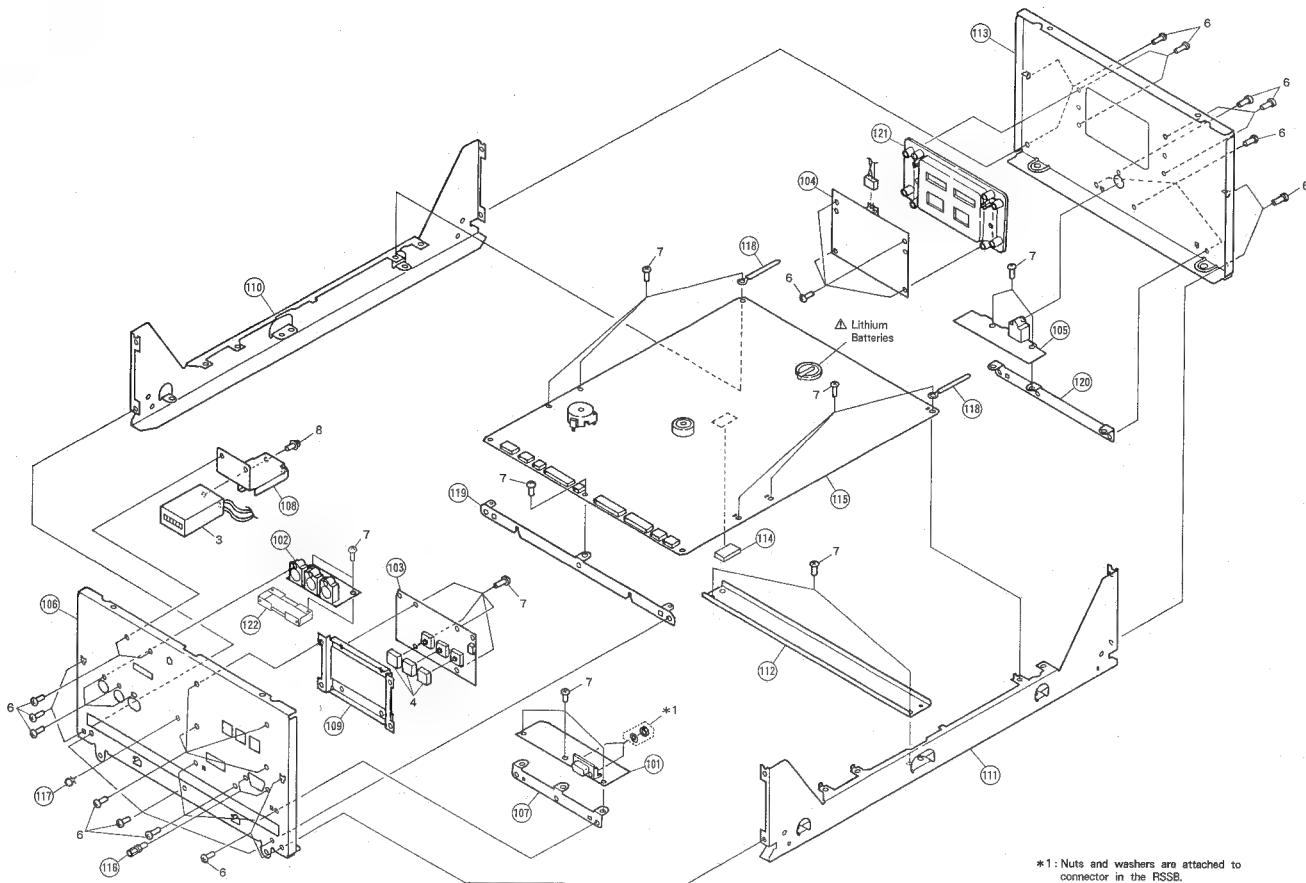
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5

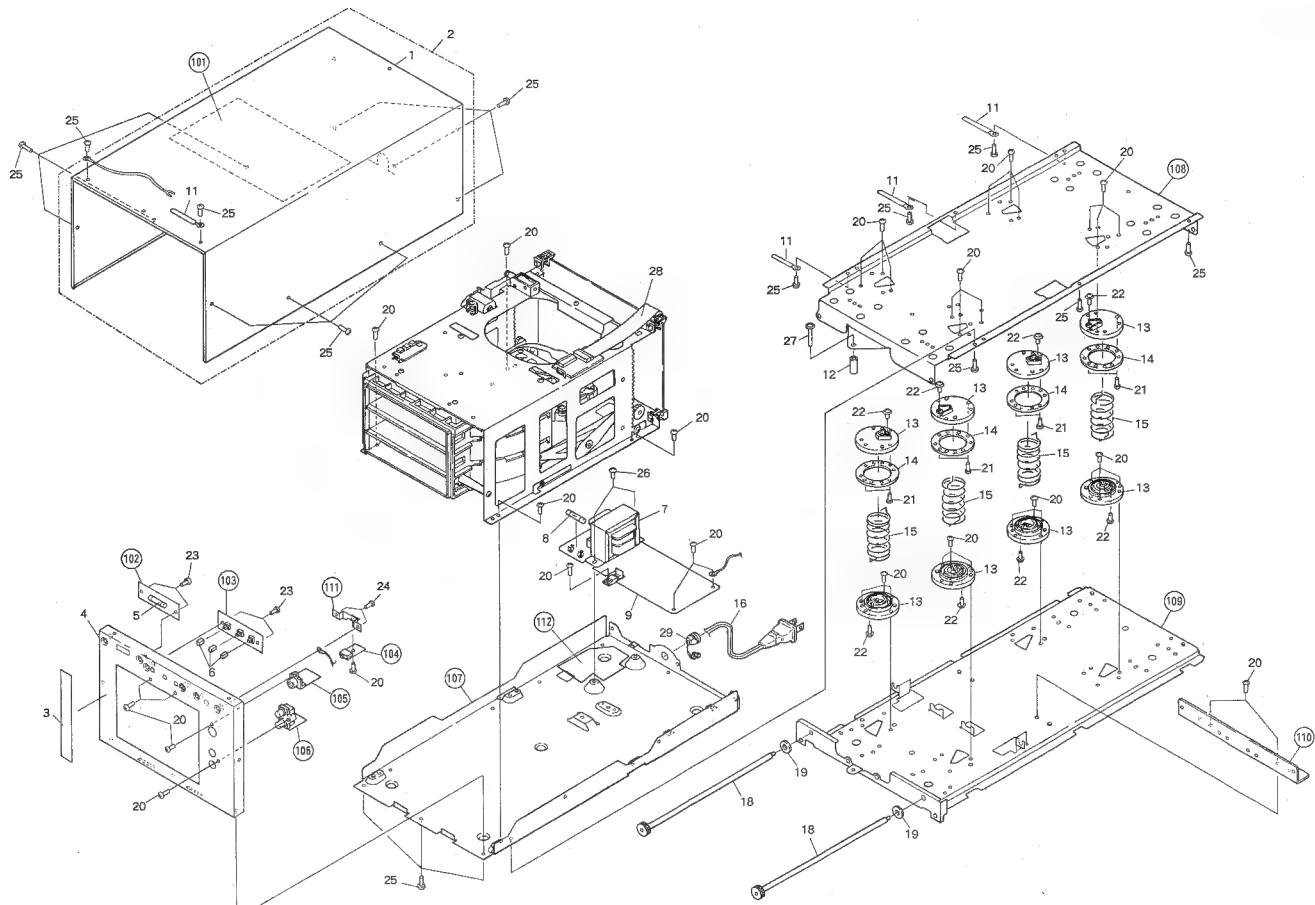
6

18

2.1.6 COMMANDER SECTION

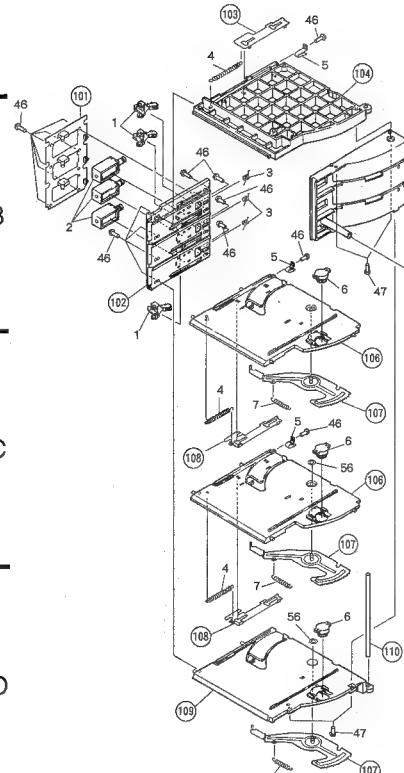


*1: Nuts and washers are attached to connector in the BSSB

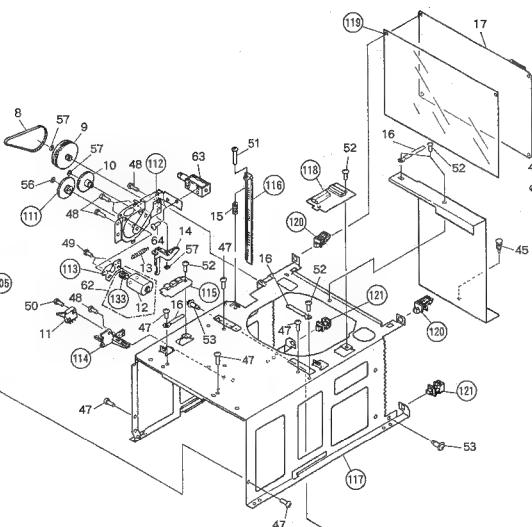


2.2.2 MECHANISM SECTION

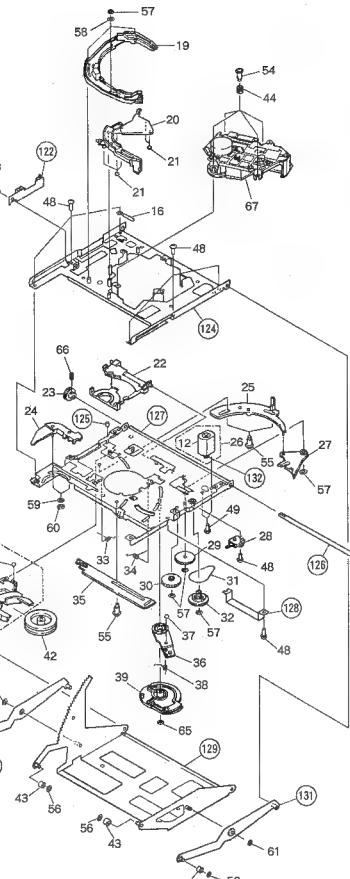
A



B



C



D

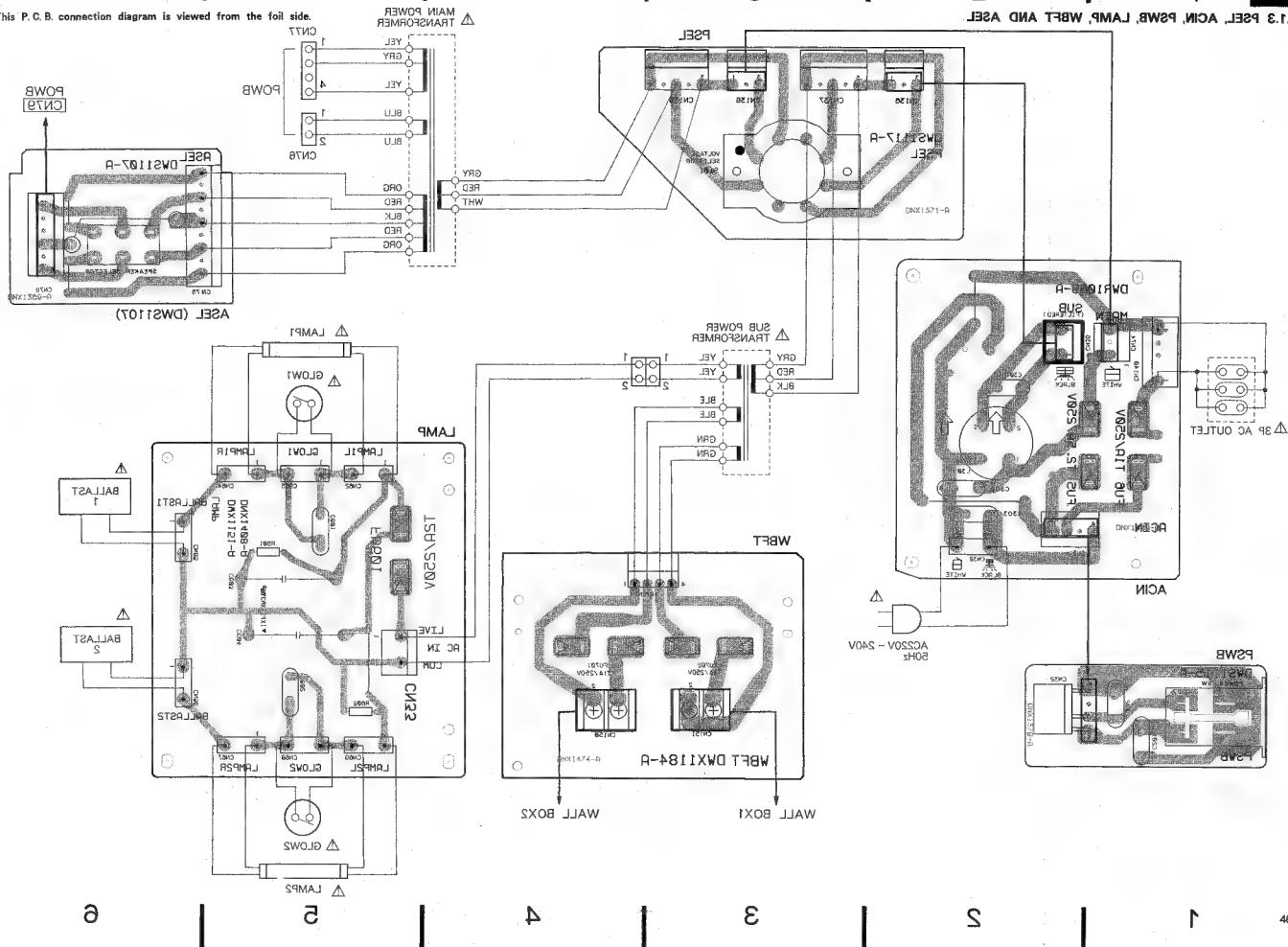
A

B

C

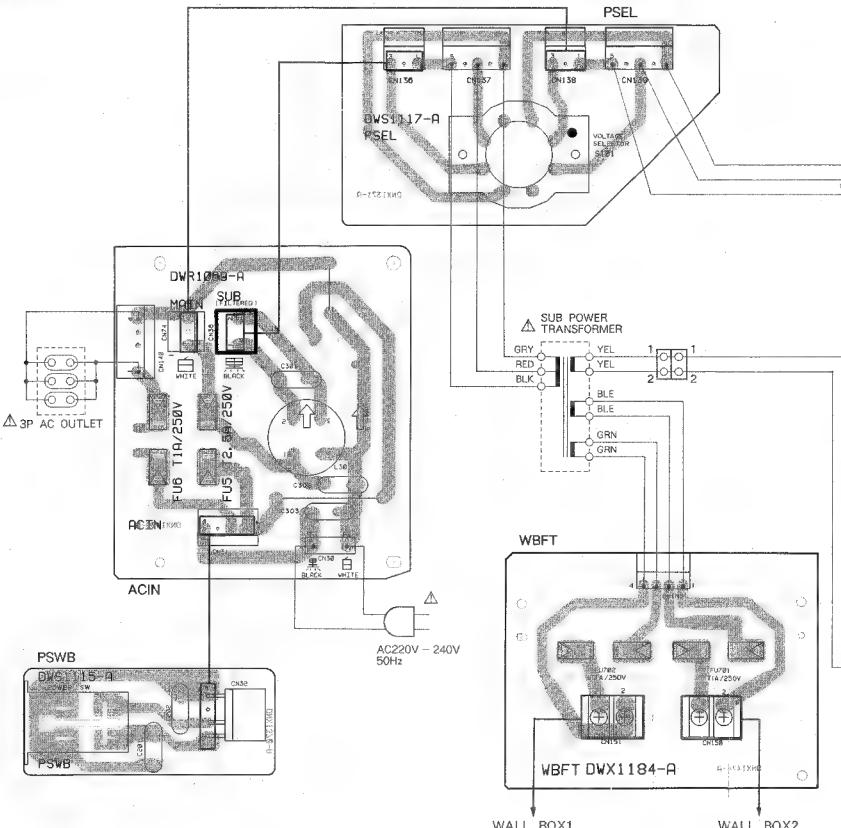
D

This P.C.B. connection diagram is viewed from the foil side.

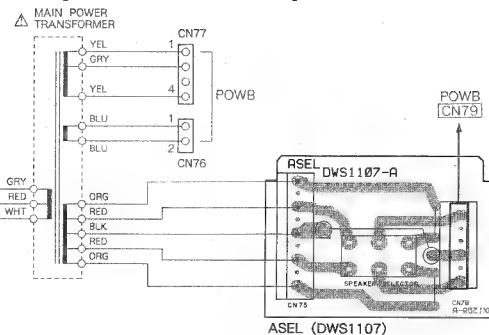


4.1.3 PSEL, ACIN, PSWB, LAMP, WBFT AND ASEL

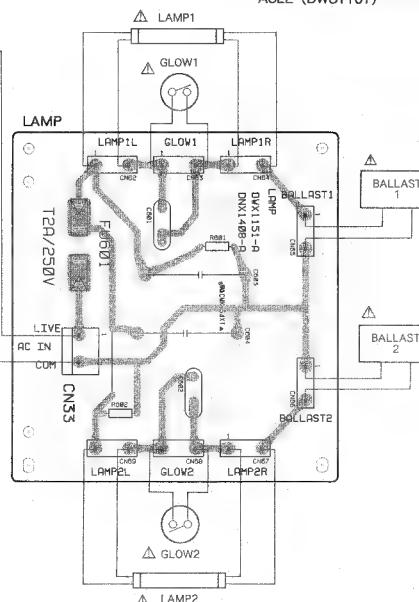
A



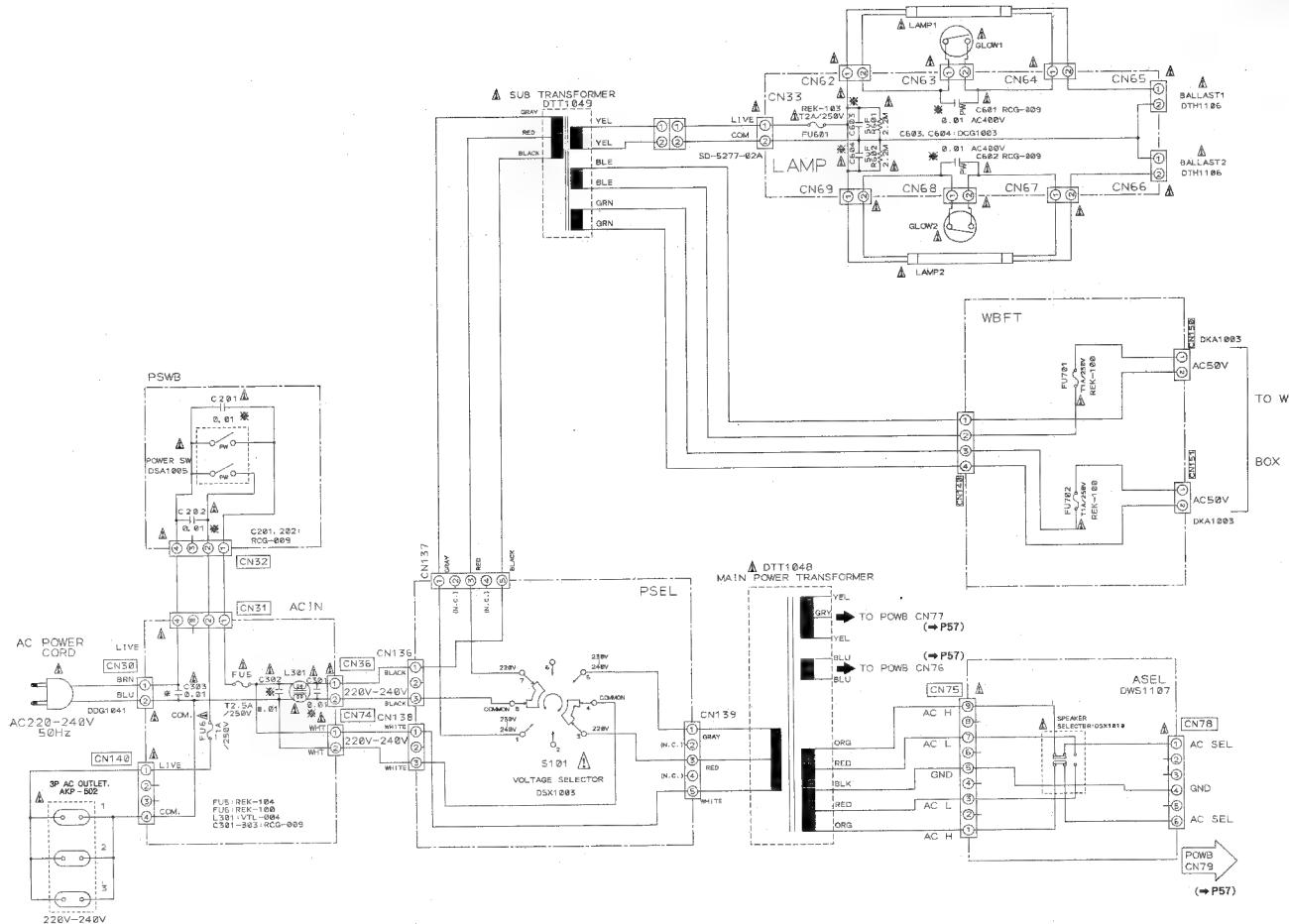
B

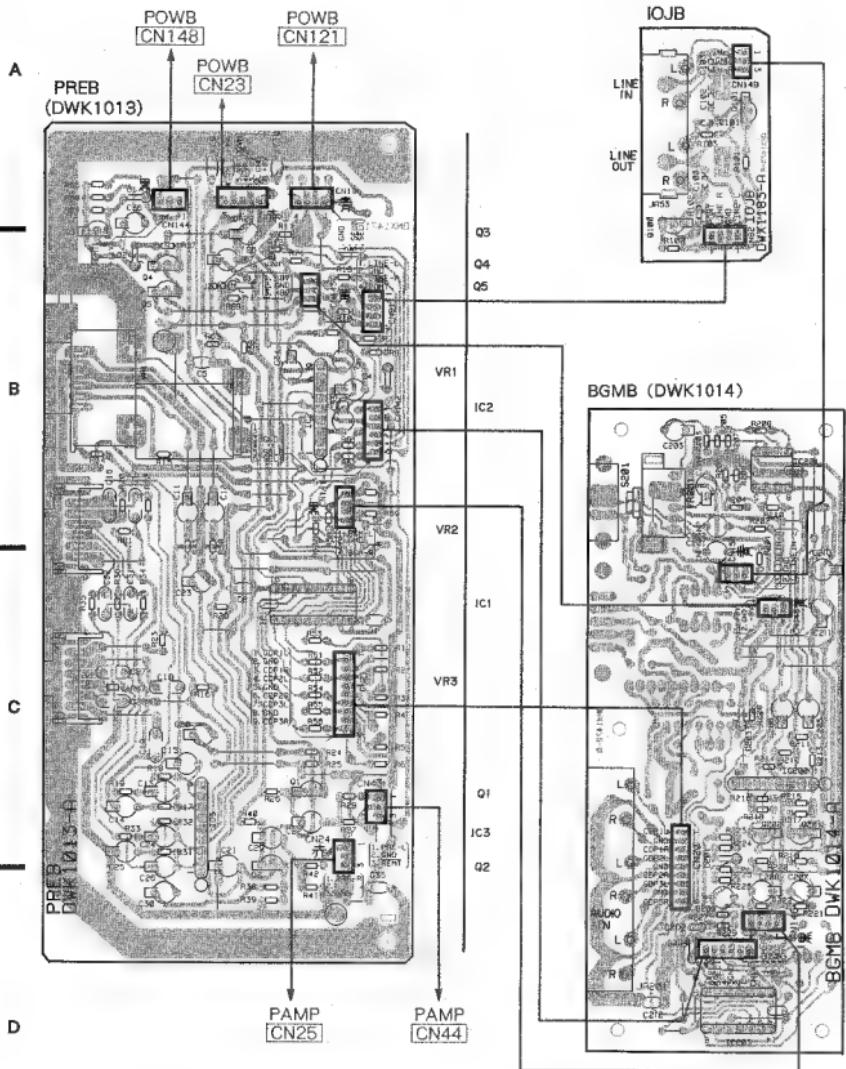


C

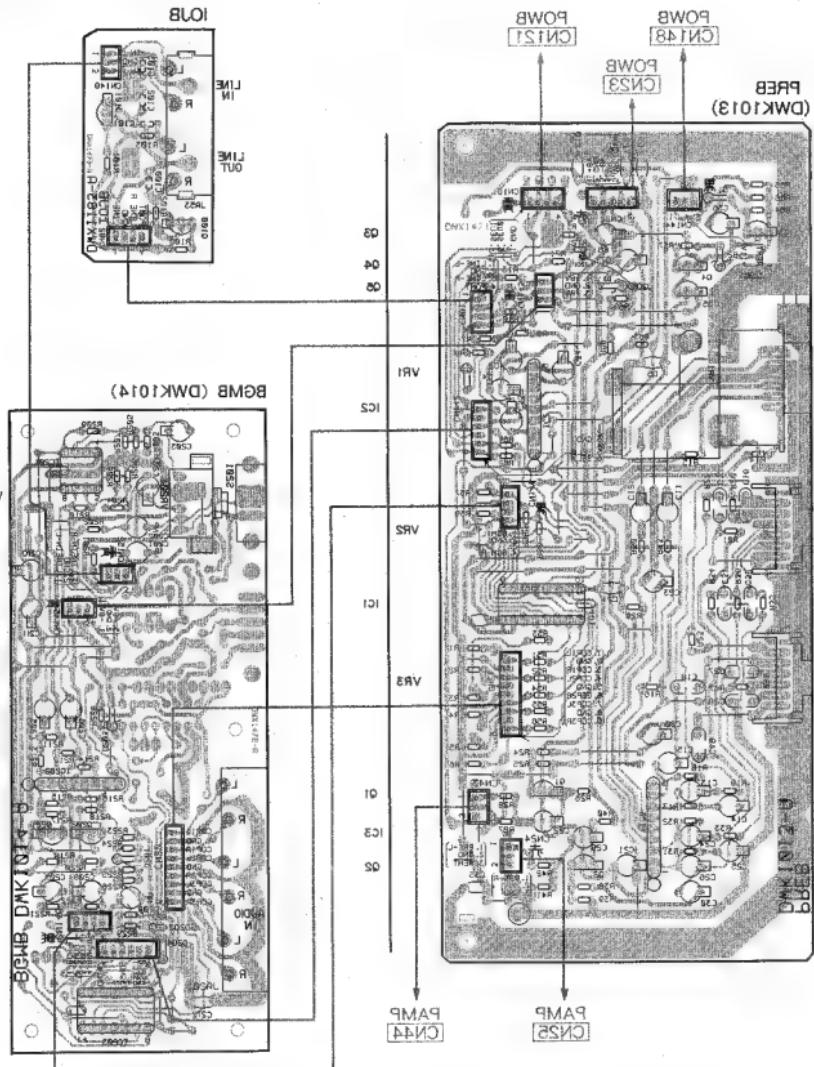


D





This P.C.B. connection diagram is viewed from the foil side.

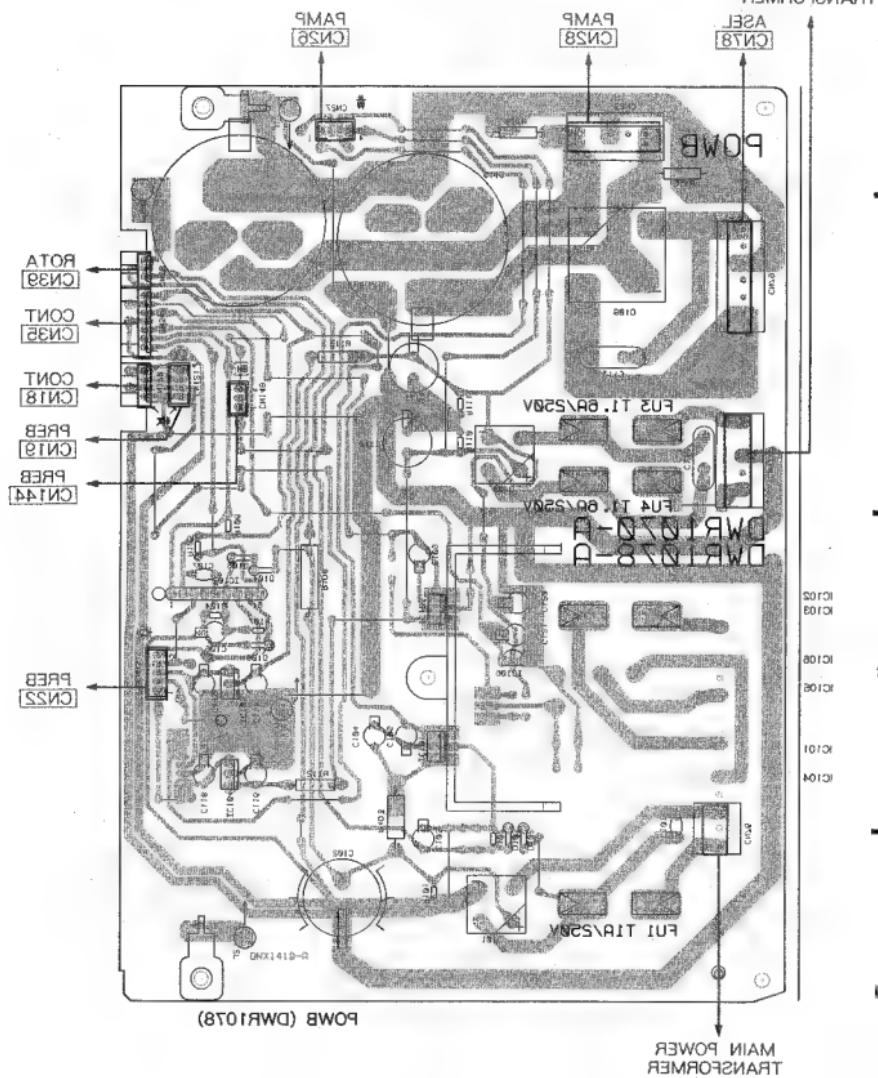


A

B

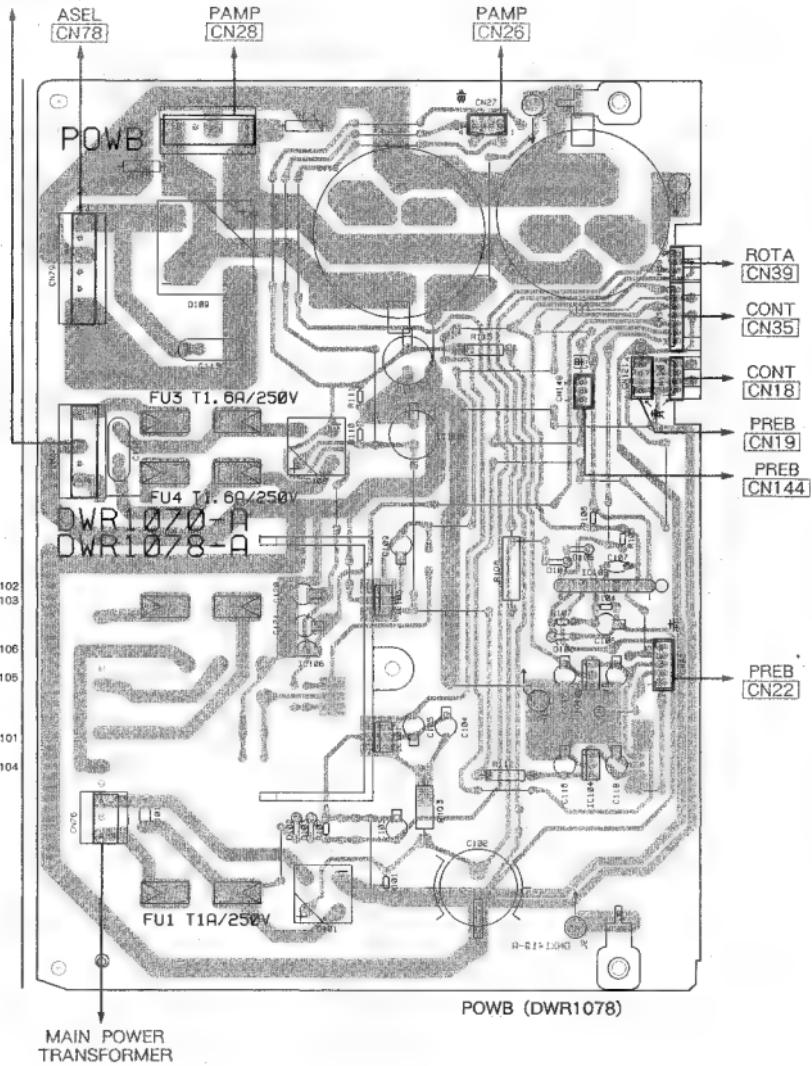
C

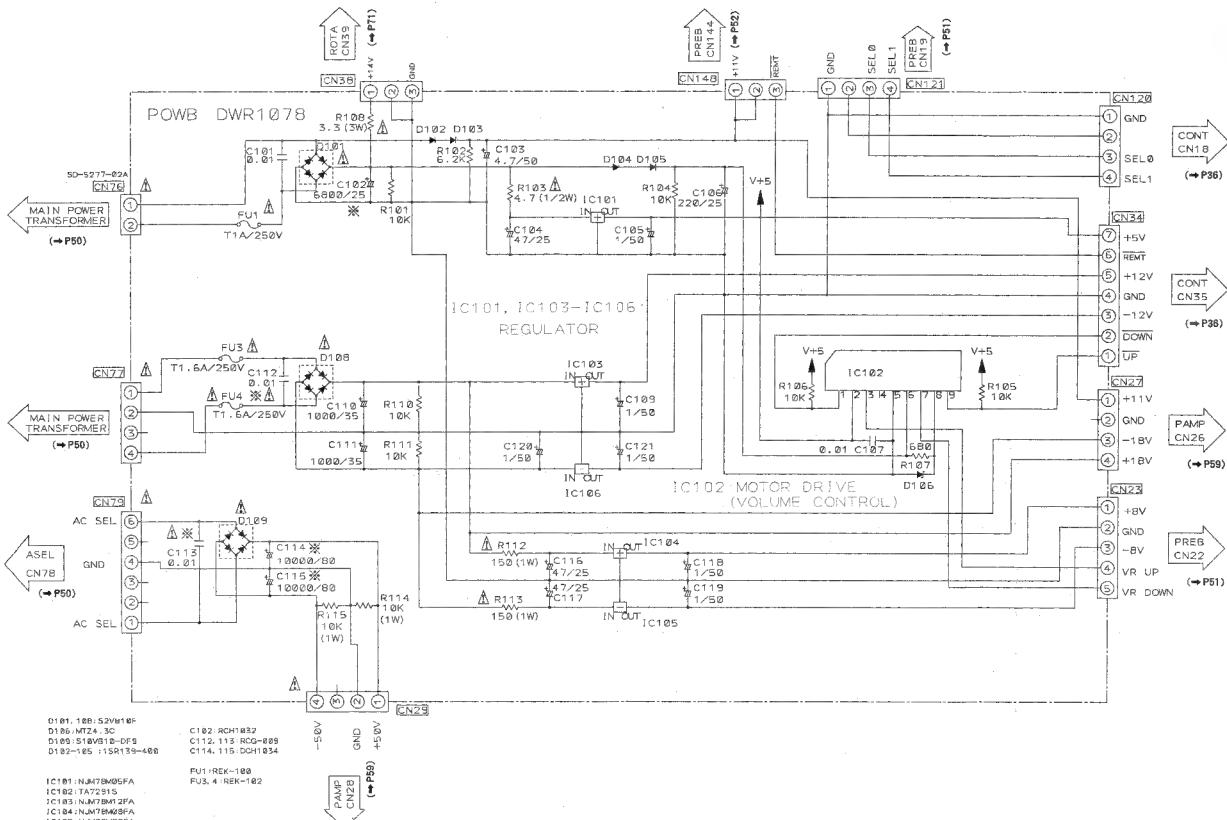
D



4.1.5 POWB

MAIN POWER TRANSFORMER



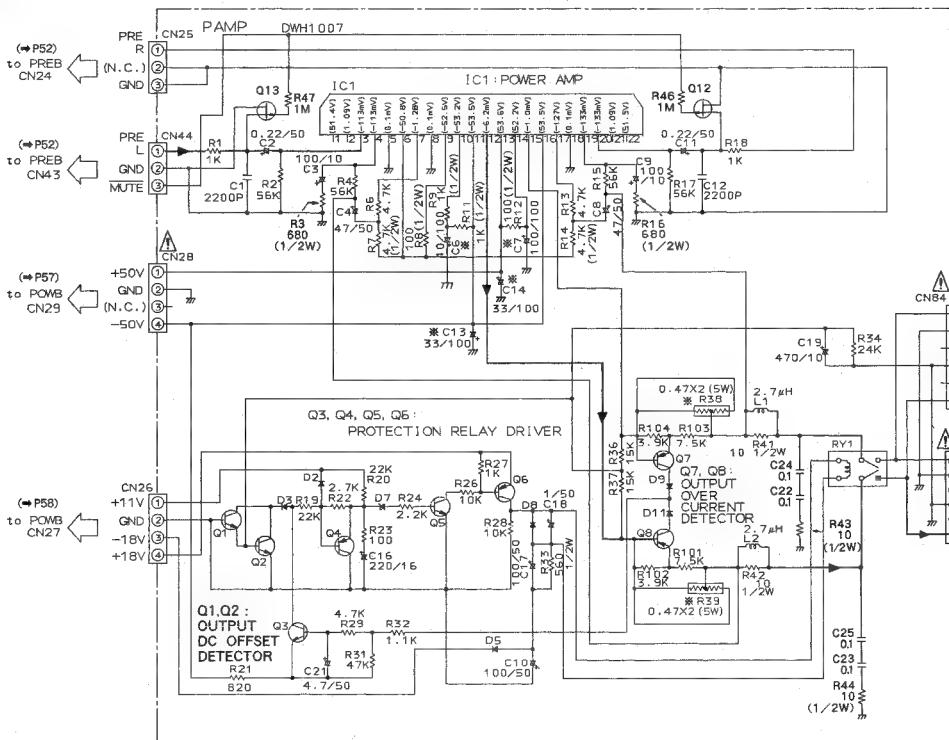


D101, 10B: S2VB10F
D106, MT24, 3C
D109: S1VB12-DF9
D192-10E : 150139-480

IC181: NJM78M05FA
IC182: TA7291S
IC183: NJM78M12FA
IC184: NJM78M06FA
IC185: NJM78M28FA
IC186: NJM78M12A

FU1 : REK-100
FU3, 4 : REK-102

4.1.6 PAMP, SPTB AND NETWORK ASSEMBLY

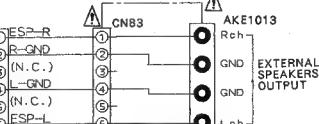


: AUDIO Signal Line

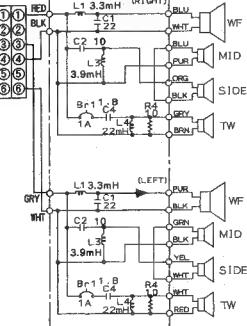
PAMP

IC1 : STK4231 - 2
 Q1, Q2, Q3 : 2SC1775
 Q3 : 2SC1775
 Q4 : 2SA933S
 Q6 : 2SA1283
 Q7, Q8 : 2SA970
 Q12, Q13, Q14 : 2SC1775
 D2 : ISS254
 D3 : ISS142
 D5, D8, D9, D11 : ISR35 - 100AVL
 D7 : MTZJ6.8B
 L1, L2, L3 : 1.2mH
 RY1 : RSR1014
 R38, R39 : DCCN1020
 C6 : DCH1022
 C7 : DCH1019
 C13, C14 : DCH1018

<EXT. SP> SPTB (DWX1124)



<INT. SP> NETWORK ASSEMBLY SWN1219



NETWORK ASSEMBLY

L1 : STH1100
 L3 : STH1021
 L4 : STH - 327
 Br1 : SSG - 004

1

2

3

4

5

6

A

A

B

B

C

C

D

D

PAMP(DWH1007)

POWB
[CN27]POWB
[CN29]

Q5.06 Q4

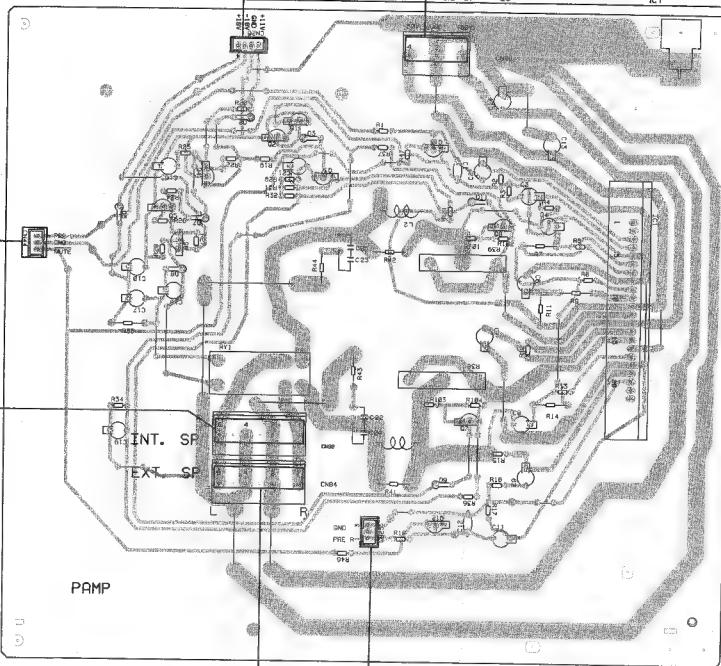
Q1-03

Q15

Q12 Q7

28

JC1



1

2

3

4

5

6

1

2

3

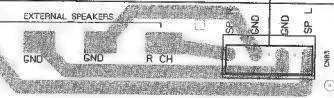
4

5

6

NETWORK ASSEMBLY(SWN1219)

SPTB (DWX1124)



6

5

4

3

2

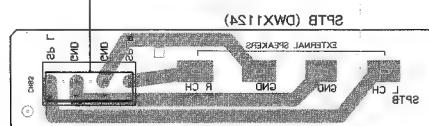
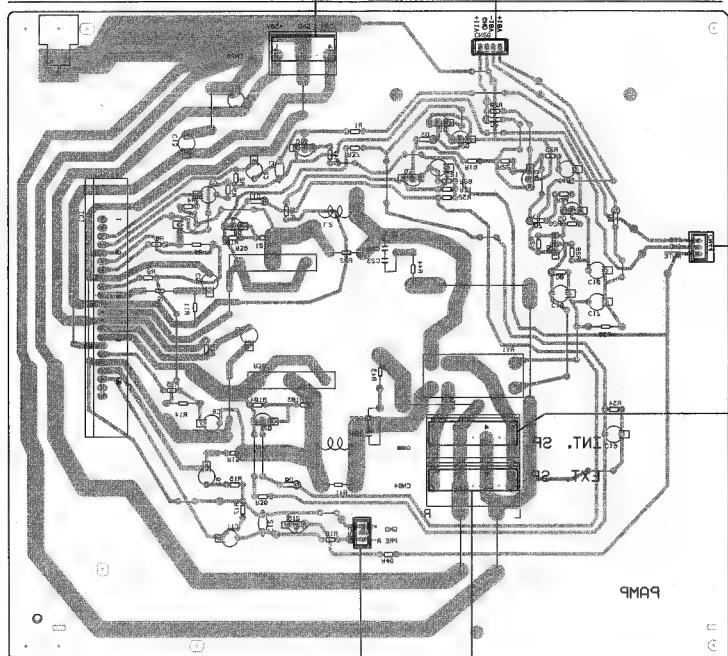
1

A

B

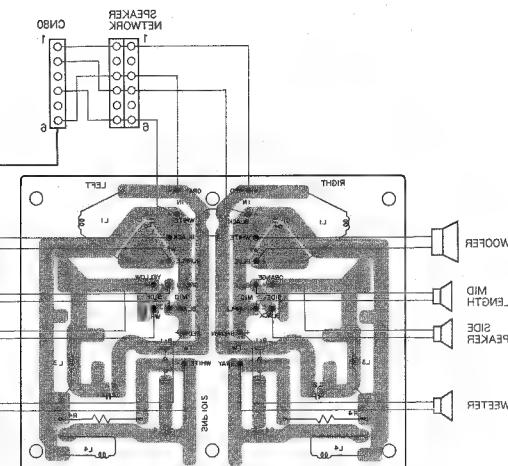
C

D



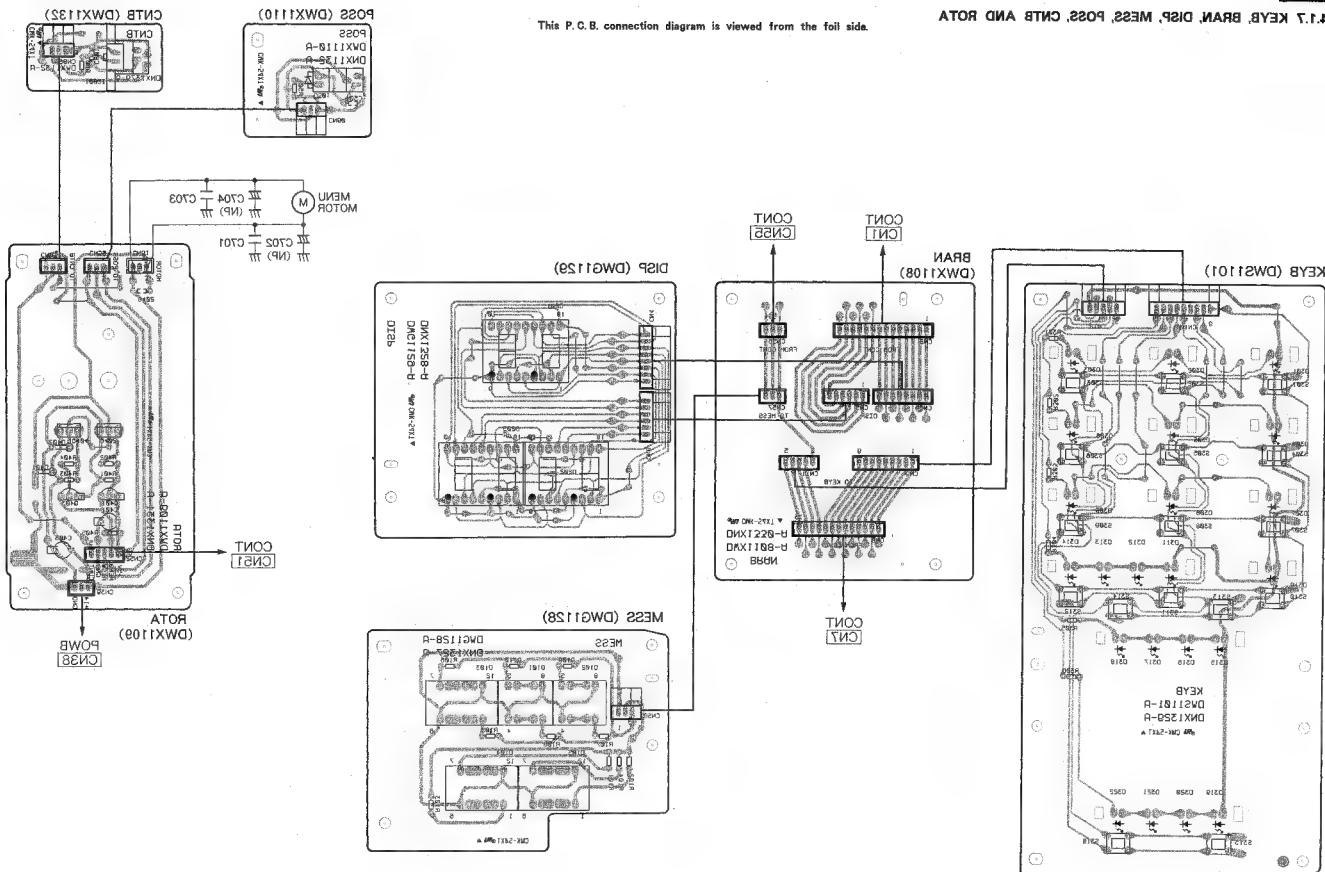
This P.C.B. connection diagram is viewed from the foil side.

NETWORK ASSEMBLY (SMN1212)



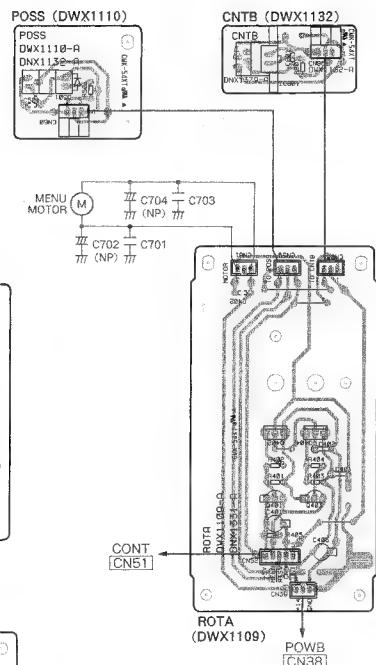
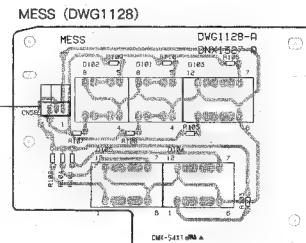
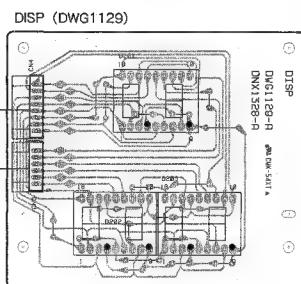
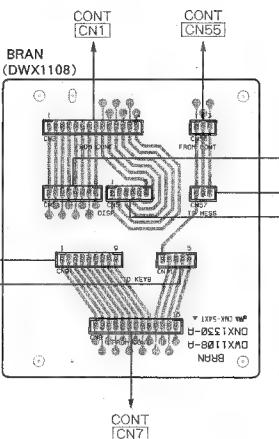
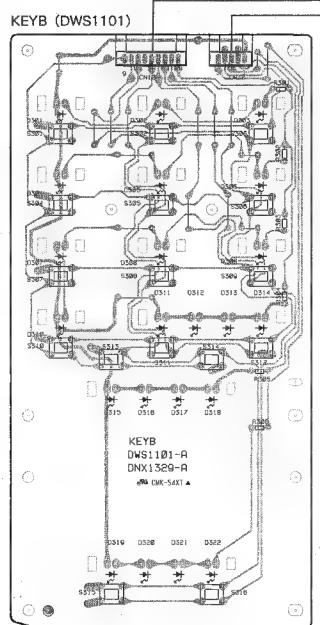
A.J.2 KEY, BURN, DISP, MESS, POSS, CONT, BURN AND ROT

This P.C.B. connection diagram is viewed from the foil side.



4.1.7 KEYB, BRAN, DISP, MESS, POSS, CNTB AND ROTA

A

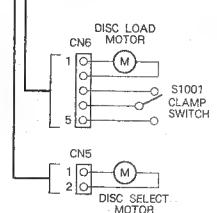
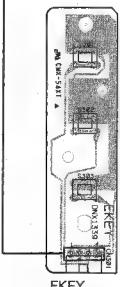
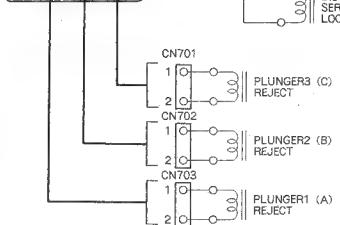
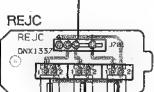
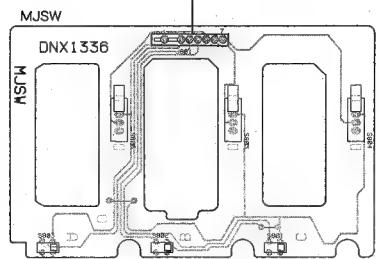
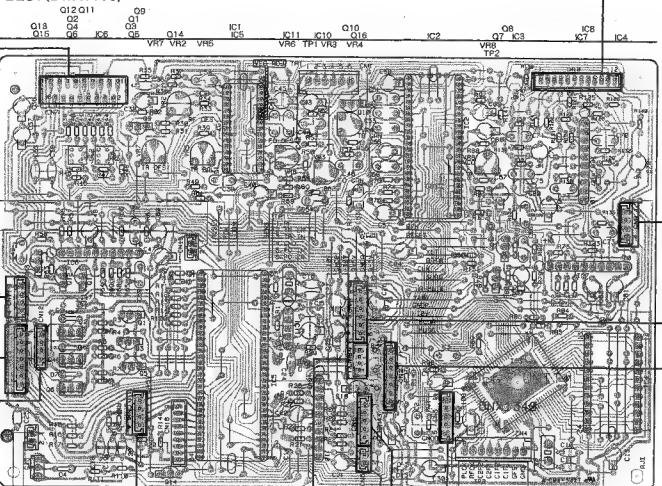
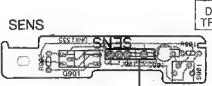
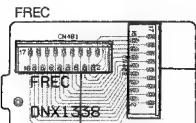
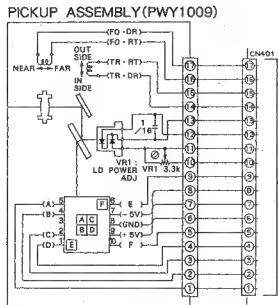


A

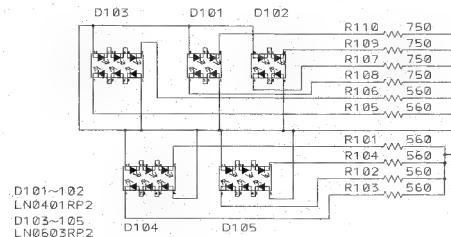
B

C

D



MESS DWG1128

BRAN
DWX1108

CN57

CN56

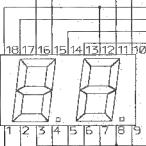
B

D201 D202 D203

CN4

CN3

CN2

D201 LN526YA
D202~203 LNS26RA (V)

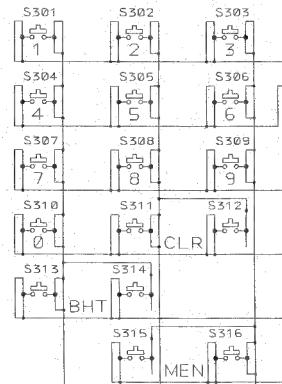
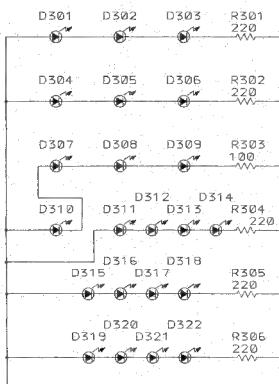
CN6

CN4

CN3

DISP
DWG1129

D



CN8

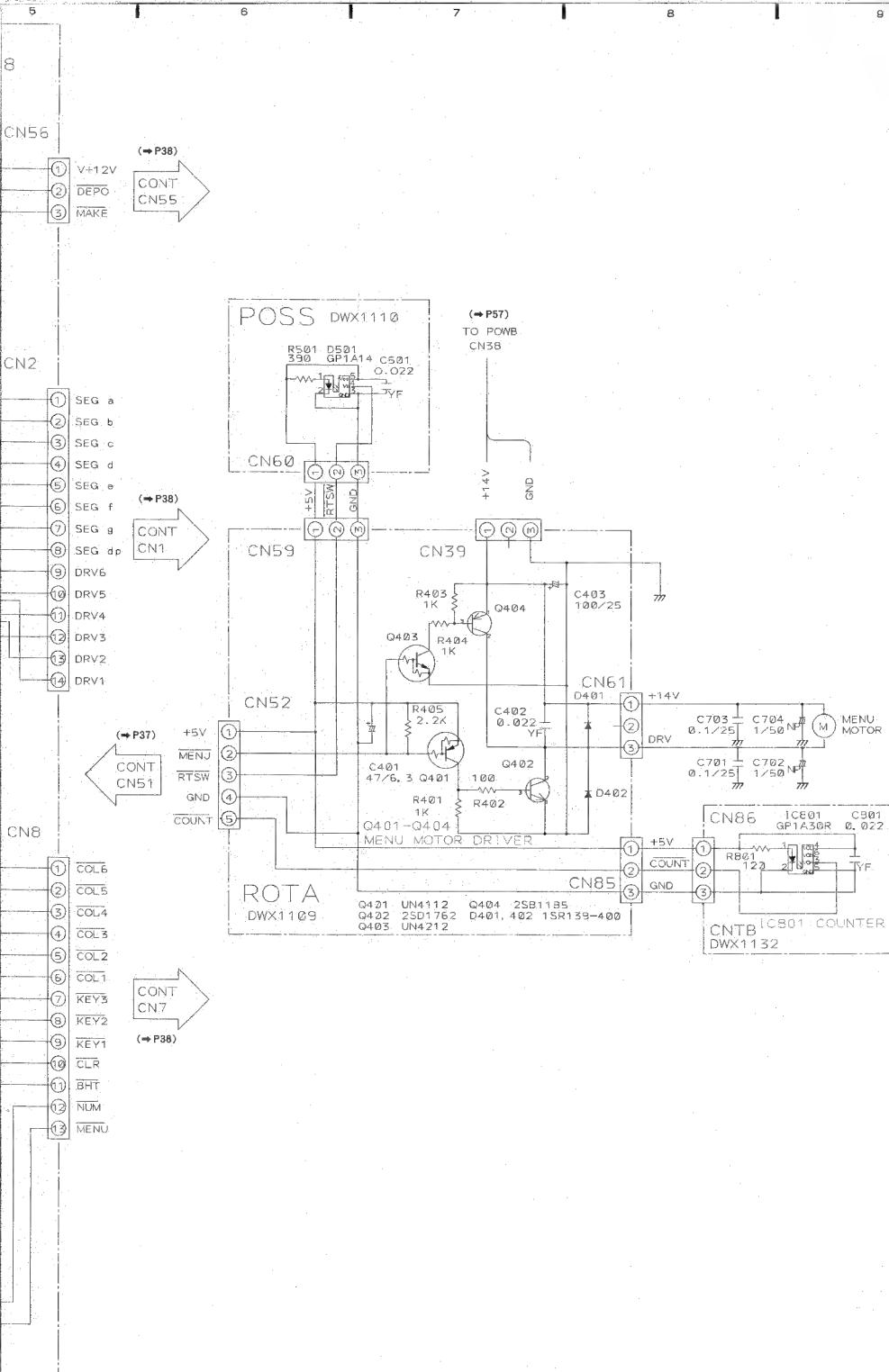
E

KEYB
DWS1101

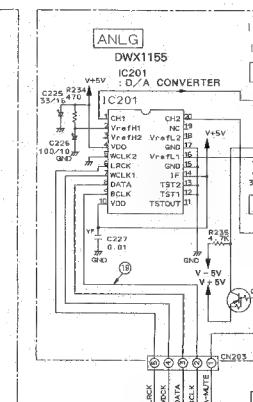
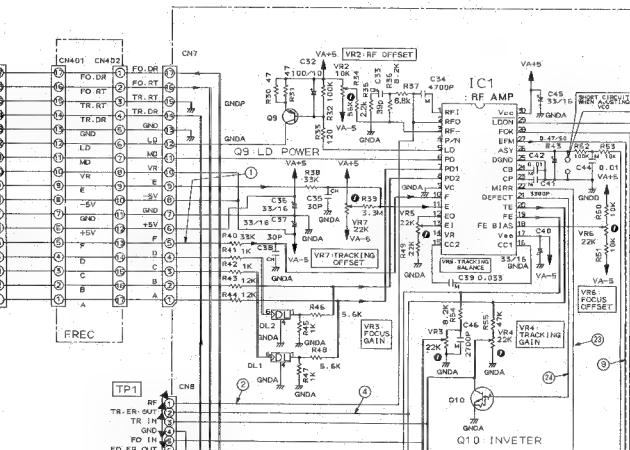
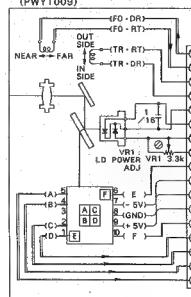
D301~310
SLV-31MC3
D311~314
SLV-31DC3
D315~322
SLV-31YC3
S301~310
DSG1611
S311~316
RSG-155

CN12

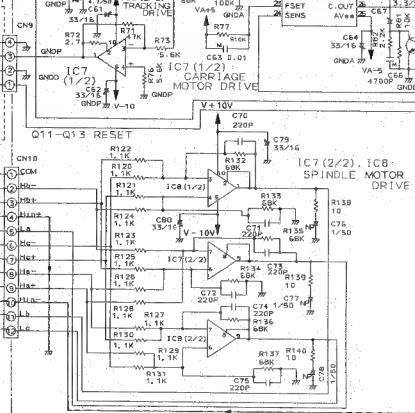
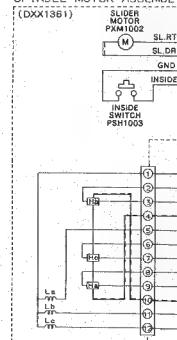
CN11



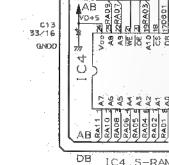
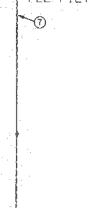
PICKUP ASSEMBLY (PWY1009)



SPINDLE MOTOR ASSEMBLY (DXX13B1)

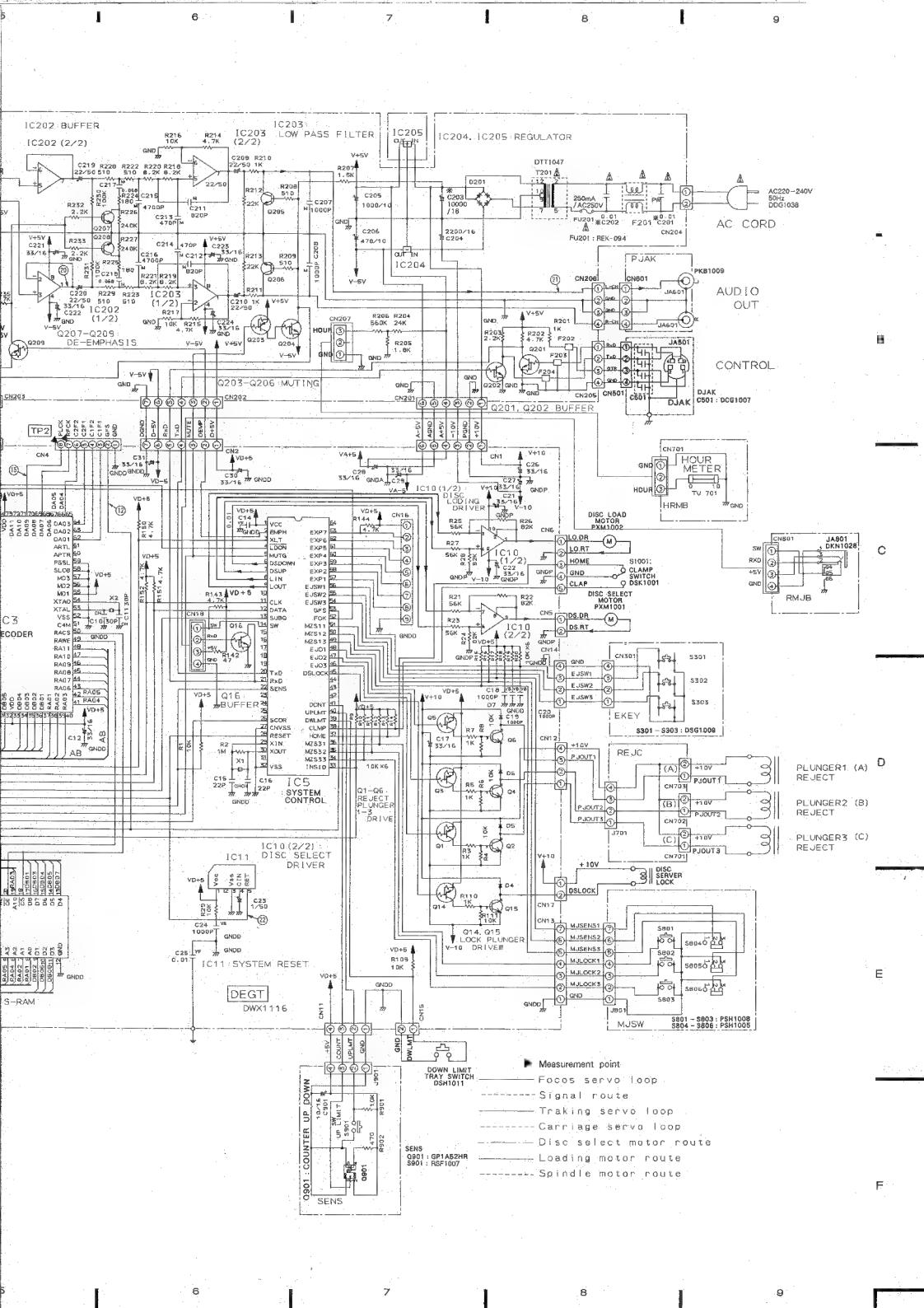


Q7, Q8, PLL FILTER



| | | | | | | |
|------|-----------|--------------|------------------|----------|------------|-------------|
| DEGT | IC1 | CA1001S | 01.03.06.012.014 | DTA1245S | D4 - D7 | 1S5254 |
| | IC2 | CA1001S | 01.03.06.012.015 | DTA1245S | D8 - D11 | 1S5254 |
| | IC3 | CXD1130S2 | 07.08.011 | 2SC1740S | VR3 - VR7 | VR1BV5/S103 |
| | IC4 | PD20668P-12L | 01.01.016 | 2SC1740S | VR8 | VR1BV5/S223 |
| | IC5 | PD20668P-12L | 01.01.016 | 2SC1740S | VR9 - VR10 | VR1BV5/S102 |
| | IC6, IC10 | CA1001S | 013 | 2SA933S | X2 | PSS - 012 |
| | IC7 | CA1001S | 013 | DL1, DL2 | | |

| | | | | | | |
|------|-------|------------|----------------|----------|-------------|-------------|
| ANLG | IC201 | LC778S | 0201.0202.0204 | DTC124ES | D201 - D24 | 2W02 - 5008 |
| | IC202 | LC778S | 0201.0202.0204 | 2SC1740S | F202 - F204 | VTH1001 |
| | IC204 | NUM73105FA | 0205.0206 | 2SC1302 | L201 | VTL - 157 |
| | IC205 | NUM73105FA | 0207.0208 | 2SC1740S | C203 | VCH1050 |



4

5

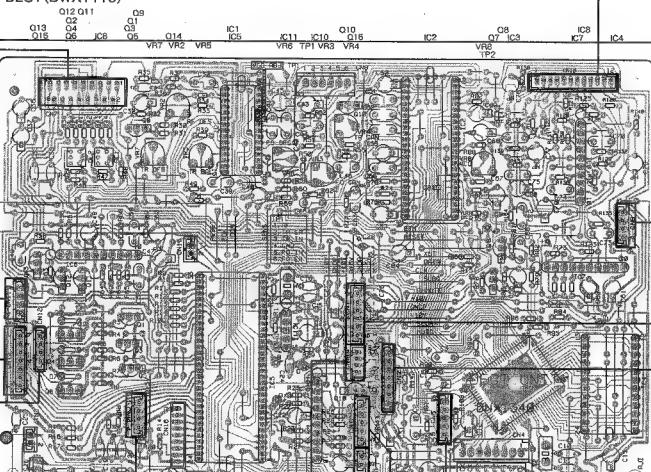
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7

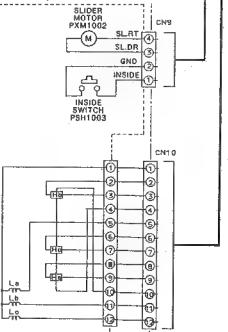
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9

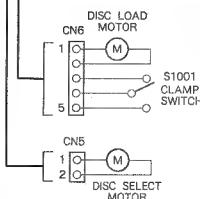
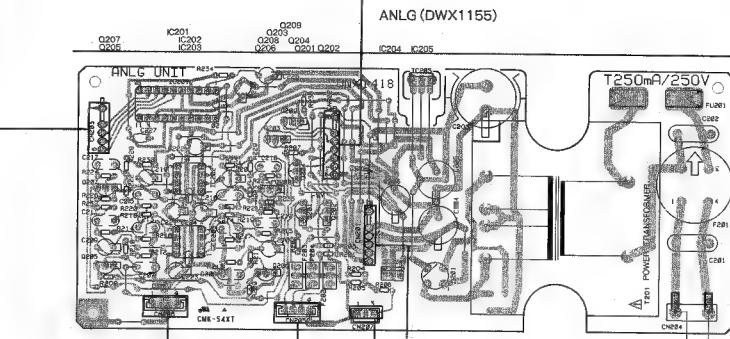
DEGT (DWX1116)



SPINDLE MOTOR ASSEMBLY (DXX1361)



ANLG (DWX1155)



4

5

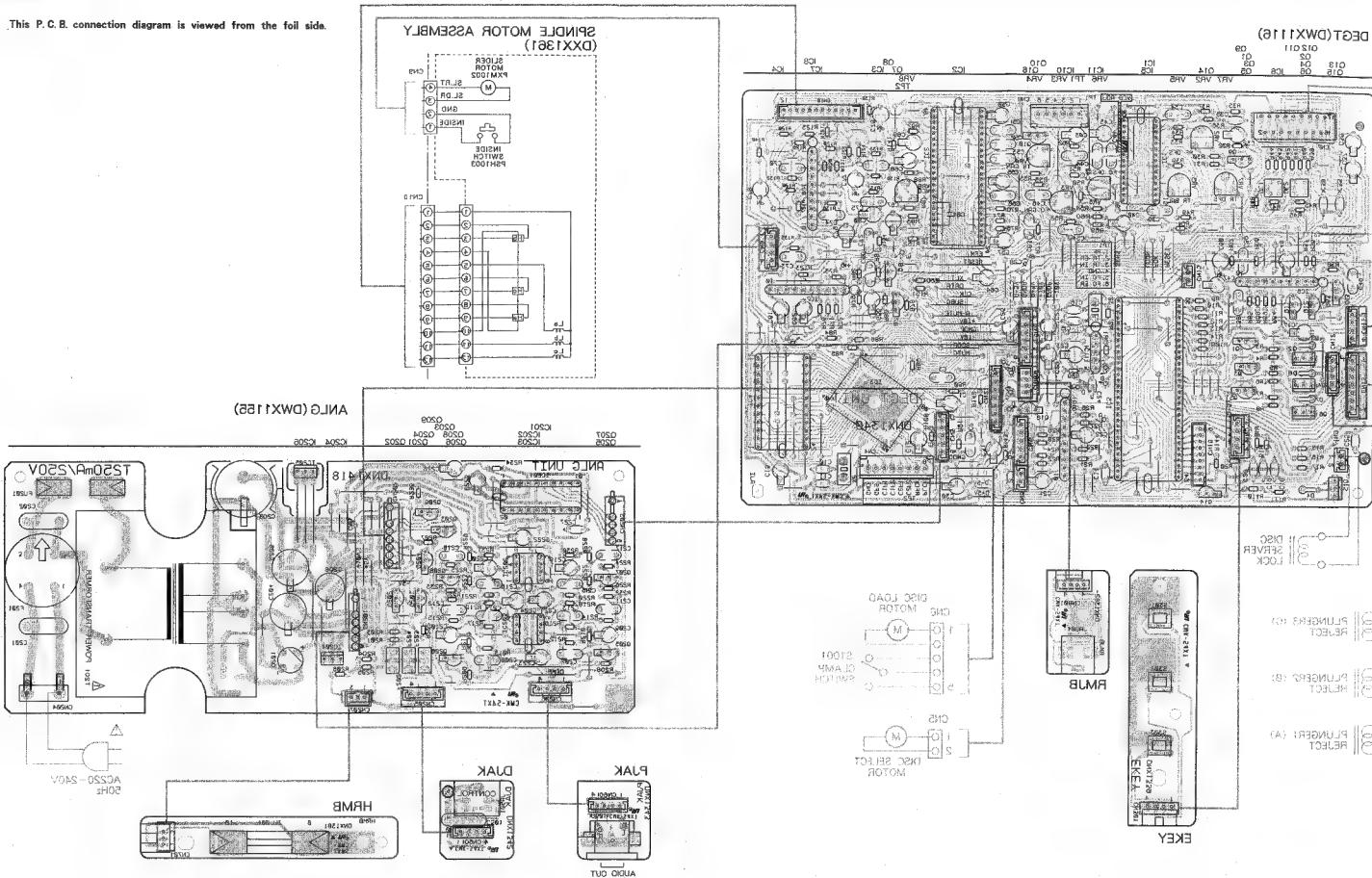
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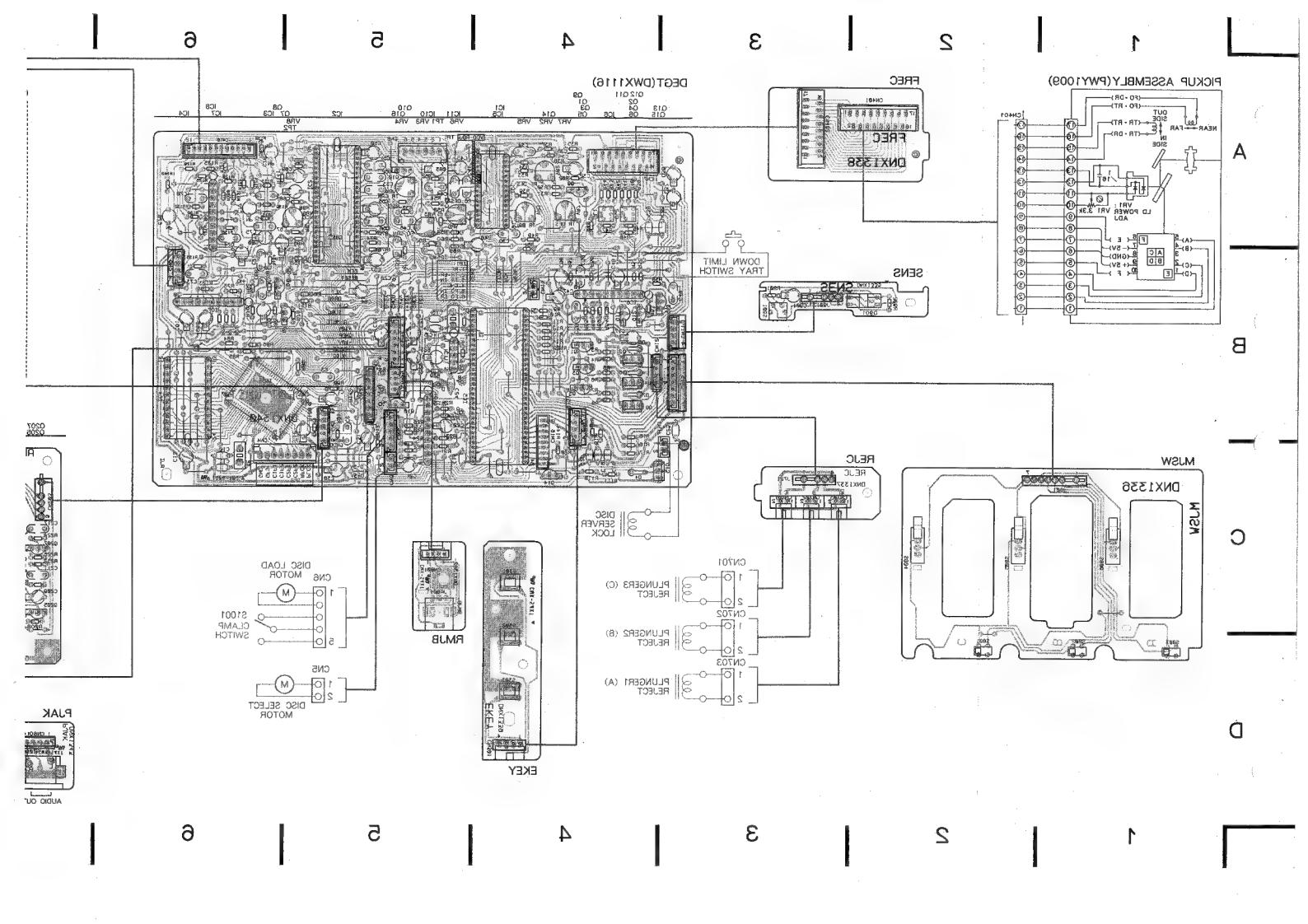
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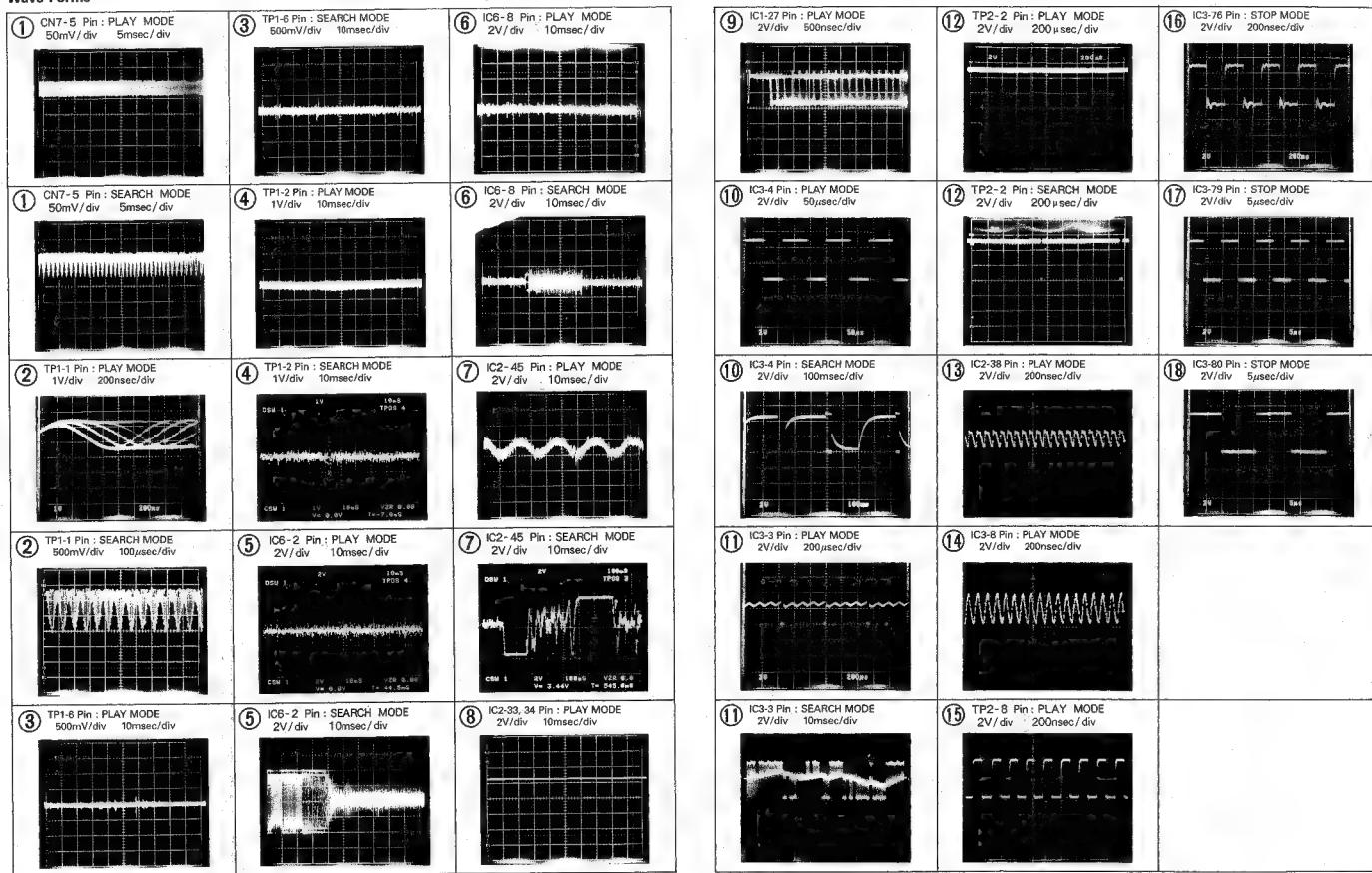
This P.C.B. connection diagram is viewed from the foil side.



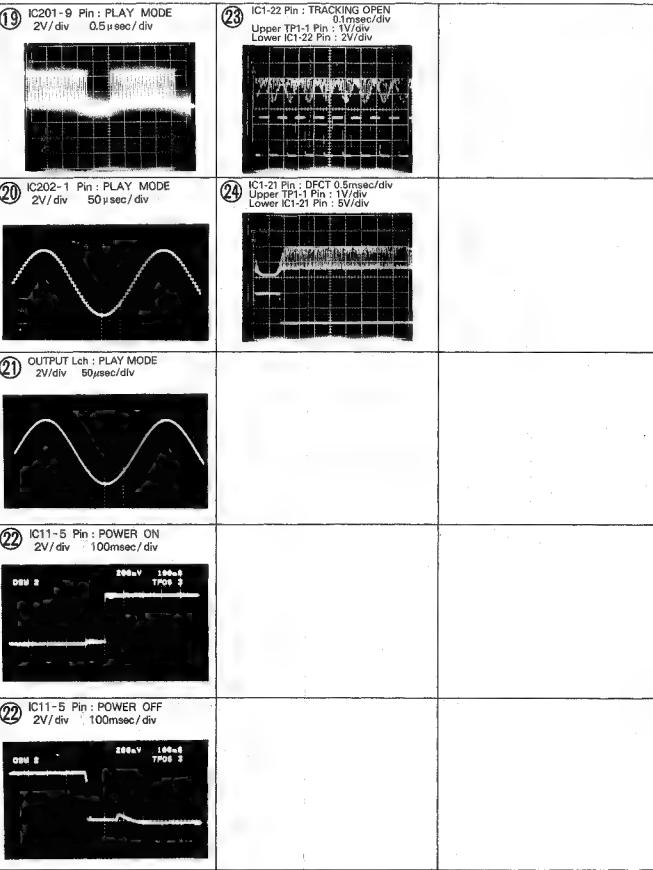
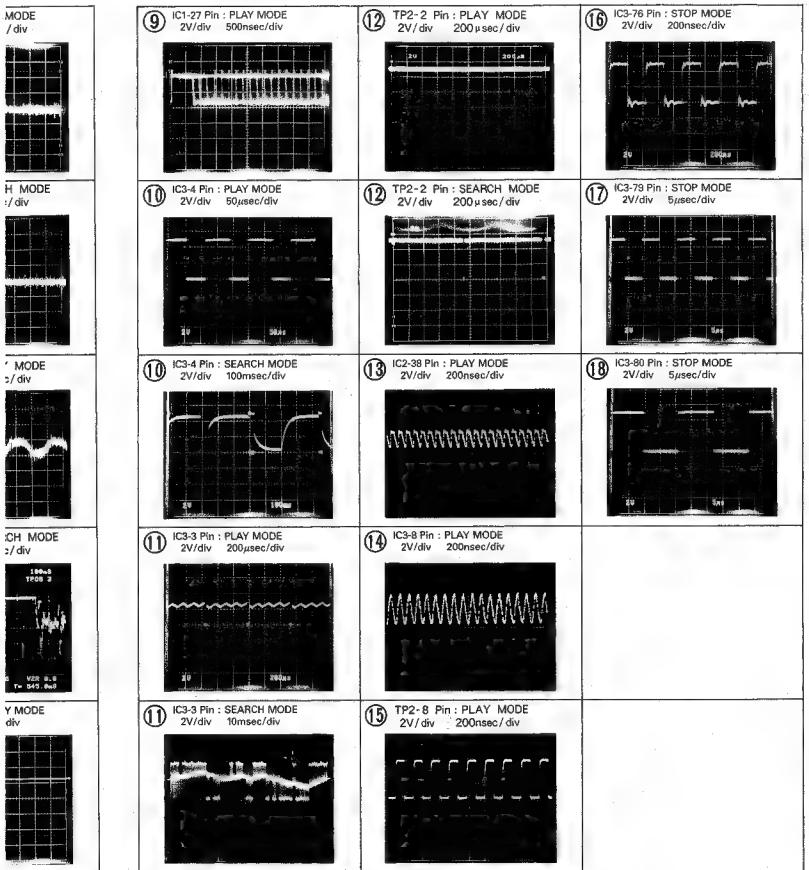


NOTE : The encircled numbers denote measuring points in the schematic diagram.

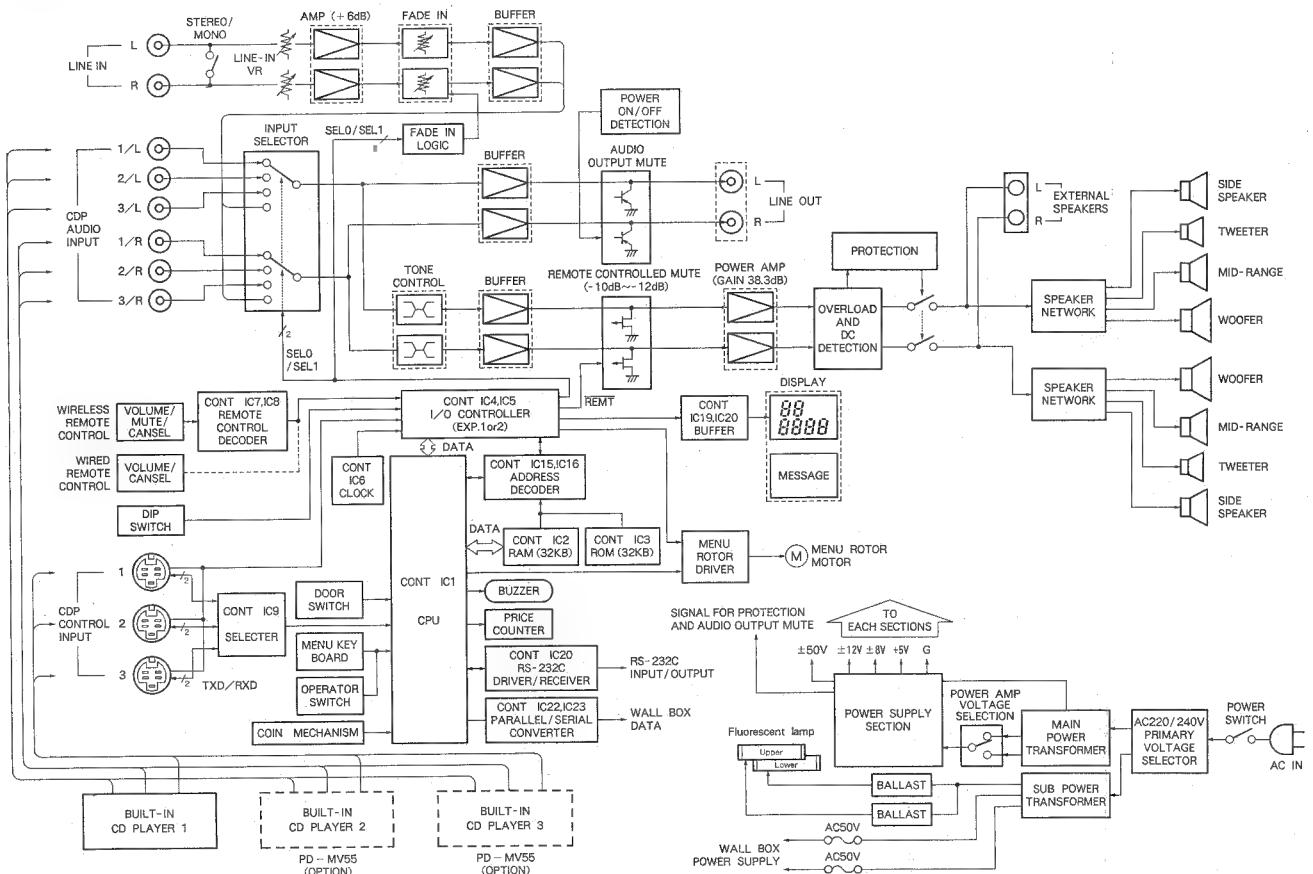
Wave Forms



suring points in the



5. BLOCK DIAGRAM



6. P. C.

MAIN SE

NOTES :
 ● Parts with
 ● Parts made
 ● The Δ mark
 ● When order
 Ex.1 When
 J - 5
 560 Ω
 47k Ω
 0.5 Ω
 0.2 Ω
 Ex.2 When
 5.32k

Mark NO
CONT

SEMICON

IC1
 IC10
 IC11
 IC12,
 IC14
 IC16
 IC17
 IC19
 IC2
 IC14
 IC20
 IC22
 IC23
 IC24
 IC25
 IC26
 IC3
 IC17
 IC19
 IC2
 IC14
 IC20
 IC22
 IC23
 IC24
 IC25
 IC26
 IC3

IC4, 1
 IC6
 IC7
 IC8
 IC9
 Q1
 Q1-3
 Q36
 Q37
 Q38,
 Q38,
 Q4
 Q43-
 Q48
 Q49
 Q58,
 Q58,

Q50-
 Q51
 Q54-
 Q54-
 Q58,

6. P.C.B.'S PARTS LIST

MAIN SECTION

NOTES :

- Parts without part number cannot be supplied.
- Parts marked by Δ are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

When there are 2 digits, convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by $J = 5\%$, and $K = 10\%$).

560 $\Omega \rightarrow 56 \times 10^3 \rightarrow 561$

47k $\Omega \rightarrow 47 \times 10^3 \rightarrow 473$

0.5 $\Omega \rightarrow 0.5$

1 $\Omega \rightarrow 10$

5.62k $\Omega \rightarrow 562 \times 10^3 \rightarrow 5621$

RD1/4PS 5[6]1J

RD1/4PS 4[7]3J

RN2H[0]R5K

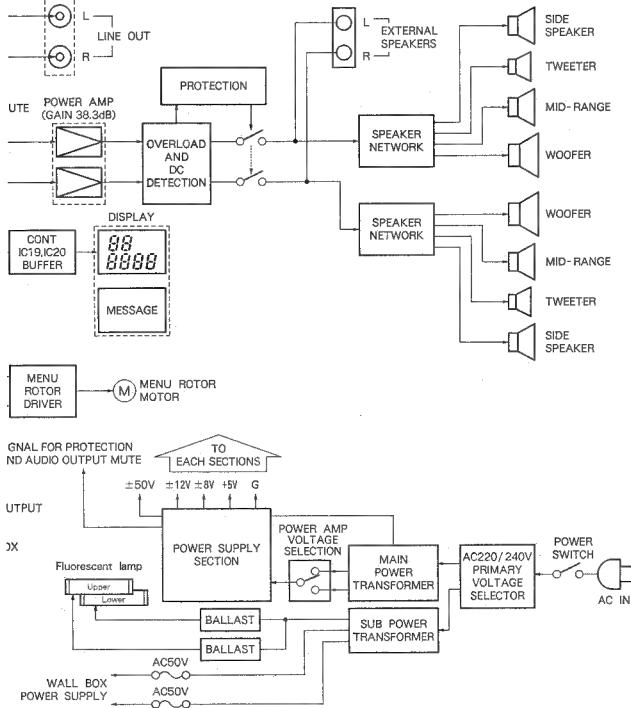
RS1P[0]10K

RN1/4SP 5[6]21J

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k $\Omega \rightarrow 562 \times 10^3 \rightarrow 5621$

RN1/4SP 5[6]21J



| Mark NO | Description | Part NO. | Mark NO | Description | Part NO. |
|-----------------------|---------------------|--------------|----------|----------------------|------------|
| CONT | | | | | |
| SEMICONDUCTORS | | | | | |
| IC1 | | M50747SP | Q91-96 | | DTC114BS |
| IC10 | IC | MCL1540SP | D1 | DIODE | ISS254 |
| IC11 | SYSTEM PRESET IC | M5295L | D17-19 | DIODE | ISS254 |
| IC12,13 | LOGIC IC | TQ74HC14AP | D2 | DIODE | ISS254 |
| IC14,15 | LOGIC IC | TQ74HC010AP | D3,4 | DIODE | MT25,1B |
| IC16 | | TQ74HC1002AP | D5 | ZENER DIODE | |
| IC17 | LOGIC IC | SN74HC165N | | | |
| IC18 | TRANSISTOR ARRAY | ME62250LP-12 | | | |
| IC2 | CWMS 5-RAM | ME62250LP-12 | | | |
| IC20 | TRANSISTOR ARRAY | ME62254P | | | |
| IC22 | IC(RS-422A IC) | SN75176BP | | | |
| IC23 | | HD64941 | P20-23 | | |
| IC24 | LOGIC IC | TQ74HC14AP | P25,28 | | |
| IC26 | LOGIC IC | TQ74HC010AP | P3 | | |
| IC3 | IC | PDS157A | P30-34 | | |
| IC4,5 | IC | CX0195Q | P4-9 | | |
| IC6 | IC(REAL TIME CLOCK) | TC3250P | | | |
| IC7 | IC | PD5027 | | | |
| IC8 | | TQ74HC574AP | | | |
| IC9 | MUXPLEXOR | TQ74HC052AP | | | |
| Q1 | TRANSISTOR | 2SC3246 | C108 | CAPACITOR ARRAY | CKCY103250 |
| Q2,3 | TRANSISTOR | 2SC1740S | C111 | CERAMIC CAPACITOR | CKCY103250 |
| Q36 | TRANSISTOR | 2SC1740S | C110 | CAPACITOR ARRAY | CKCY103250 |
| Q37 | TRANSISTOR | 2SA1015 | C111,112 | CERAMIC CAPACITOR | CKCY103250 |
| Q38,39 | TRANSISTOR | 2SC1740S | C113 | CERAMIC CAPACITOR | CKCY102520 |
| Q4 | TRANSISTOR | 2PC140S | C114 | CERAMIC CAPACITOR | CKCY103250 |
| Q45-46 | TRANSISTOR | 2PC140S | C115 | MYLAR FILM CAPACITOR | COM223150 |
| Q48 | TRANSISTOR | 2TA140S | C116,12 | CERAMIC CAPACITOR | CEAS30W16 |
| Q49 | TRANSISTOR | 2TC124ES | C115-16 | CERAMIC CAPACITOR | CKCY103250 |
| Q5 | TRANSISTOR | 2SA1015 | C17 | ELECTR. CAPACITOR | CEAS30W16 |
| Q50-57 | TRANSISTOR | 2TC124ES | C18 | ELECTR. CAPACITOR | CEAS30R650 |
| Q6 | TRANSISTOR | 2SC1740S | C19 | CERAMIC CAPACITOR | CKCY103250 |
| Q7 | TRANSISTOR | 2TA140S | C20 | ELECTR. CAPACITOR | CEAS30M16 |
| Q84-85 | TRANSISTOR | 2TC124ES | C21 | ELECTROLYTIC CAPACIT | CEAS32M683 |
| Q89,90 | TRANSISTOR | 2TA124ES | | | |

| Mark | No. | Description | Part No. | Mark | No. | Description | Part No. |
|------------------------------|------------------|---|-------------|------|-----|-------------|----------|
| C21 | | ELECTR. CAPACITOR | CEAS470M50 | | | | |
| C22-25 | | AUDIO FILM CAPACITOR | CFTXA104M50 | | | | |
| C3 | | ELECTR. CAPACITOR | CEAS101M10 | | | | |
| C4 | | ELECTR. CAPACITOR | CEAS470M50 | | | | |
| C6 | | CAPACITOR (ALUMINUM) | DGH1022 | | | | |
| C7 | | ELECTR. CAPACITOR | DCH1019 | | | | |
| C8 | | ELECTR. CAPACITOR | CEAS470M50 | | | | |
| C9 | | ELECTR. CAPACITOR | CEAS101M10 | | | | |
| RESISTORS | | | | | | | |
| R11, 12 | | CARBON FILM RESISTOR | RD1/2LF□□□J | | | | |
| R14 | | CARBON FILM RESISTOR | RD1/2LF472J | | | | |
| R3, 16 | | CARBON FILM RESISTOR | RD1/2MF681J | | | | |
| R33 | | CARBON FILM RESISTOR | RD1/2LF651J | | | | |
| R38, 39 | | RESISTOR | DQN1020 | | | | |
| R41-44 | | CARBON FILM RESISTOR | RD1/2LF100J | | | | |
| RT-9 | | CARBON FILM RESISTOR | RD1/2LF□□□J | | | | |
| Other resistors | | | RD1/6PM□□□J | | | | |
| ACIN | | | | | | | |
| COIL | | | | | | | |
| △ | L301 | FILTER | VIL-004 | | | | |
| CAPACITORS | | | | | | | |
| △ | C301-303 | CAPACITOR (CERAMIC) | RCG-009 | | | | |
| OTHERS | | | | | | | |
| △ | CN36, 74 | CONNECTOR | SD-5277-02A | | | | |
| ● POWB (DWR1078) | | | | | | | |
| SEMICONDUCTORS | | | | | | | |
| IC101 | | REGULATOR IC | NJM78M05PA | | | | |
| IC102 | | MECHANISM DRIVER IC | TAT2791S | | | | |
| IC103 | | REGULATOR IC | NJM73M12PA | | | | |
| IC104 | | REGULATOR IC | NJM78M08PA | | | | |
| IC105 | | REGULATOR IC | NJM79M08PA | | | | |
| △ | IC106 | REGULATOR IC | NJM79L12A | | | | |
| △ | D101 | DIODE | S2VB10F | | | | |
| △ | D102-105 | DIODE | 1SR139-400 | | | | |
| △ | D106 | ZENER DIODE | MTZ4.3C | | | | |
| △ | D108 | DIODE | S2VB10F | | | | |
| △ | D109 | DIODE | S10VB10-DF9 | | | | |
| CAPACITORS | | | | | | | |
| C101 | | CERAMIC CAPACITOR | CKCYF103250 | | | | |
| C102 | | ELECTR. CAPACITOR | RCH1032 | | | | |
| C103 | | ELECTR. CAPACITOR | CEAS47R7M50 | | | | |
| C104 | | ELECTR. CAPACITOR | CEAS470M25 | | | | |
| C105 | | ELECTR. CAPACITOR | CEAS010M50 | | | | |
| C106 | | ELECTR. CAPACITOR | CEAS221M25 | | | | |
| C107 | | CERAMIC CAPACITOR | CKCYF103250 | | | | |
| C109 | | ELECTR. CAPACITOR | CEAS010M50 | | | | |
| C110, 111 | | ELECTROLYTIC CAPACIT | CEAS102M35 | | | | |
| C112, 113 | | CAPACITOR (CERAMIC) | ROG-009 | | | | |
| △ | C114, 115 | ELECTROLYTIC CAPACIT | DGH1034 | | | | |
| C116, 117 | | ELECTR. CAPACITOR | CEAS470M25 | | | | |
| C118-121 | | ELECTR. CAPACITOR | CEAS010M50 | | | | |
| RESISTORS | | | | | | | |
| △ | R103 | CARBON FILM RESISTOR | RD1/2LF4R7J | | | | |
| △ | R112, 113 | METAL OXIDE RESISTOR | RS1LMF151J | | | | |
| R114, 115 | | METAL OXIDE RESISTOR | RS1LMF103J | | | | |
| △ | R108 | METAL OXIDE RESISTOR | RS1LMF083J | | | | |
| R101, 102, 104-107, 110, 111 | | CARBON FILM RESISTOR | RD1/4VM□□□J | | | | |
| OTHERS | | | | | | | |
| △ | CN76 | CONNECTOR | SD-5277-02A | | | | |
| PSWB | | | | | | | |
| SWITCH | | | | | | | |
| △ | S | POWER SWITCH (POWER) | DSA1005 | | | | |
| CAPACITORS | | | | | | | |
| △ | C201, 202 | CAPACITOR (CERAMIC) | RCG-009 | | | | |
| PSEL | | | | | | | |
| SWITCH | | | | | | | |
| △ | S101 | VOLTAGE SELECTOR SW | DSX1003 | | | | |
| OPER | | | | | | | |
| SWITCHES | | | | | | | |
| △ | S301-303 | LIGHT ACTION SWITCH [MEMORY CLEAR, MENU ROTATION, SERVICE MODE] | DSO-107 | | | | |
| ● SPTB (DWX1124) | | | | | | | |
| OTHERS | | | | | | | |
| △ | SPEAKER TERMINAL | 4-P | AKE1013 | | | | |
| CRJB | | | | | | | |
| CAPACITORS | | | | | | | |
| △ | C501 | CAPACITOR ARRAY | DGQ-105 | | | | |
| △ | C502 | CERAMIC CAPACITOR | CKCYF102250 | | | | |
| △ | C503 | CERAMIC CAPACITOR | CKCYF108250 | | | | |
| OTHERS | | | | | | | |
| △ | SOCKET (CONTROL) | VKN1072 | | | | | |
| ● MESS (DWG1128) | | | | | | | |
| SEMICONDUCTORS | | | | | | | |
| D101, 102 | | LED | LN0401RP2 | | | | |
| D103-105 | | LED | LN0503RP2 | | | | |
| RESISTORS | | | | | | | |
| △ | 101 | resister | RD1/5PM□□□J | | | | |
| ● ASEI (DWS1107) | | | | | | | |
| SWITCH | | | | | | | |
| △ | S | VOLTAGE SELECTOR SW (SPEAKER SELECTOR) | DSX1010 | | | | |

| Mark | No. | Description | Part No. | Mark | No. | Description | Part No. |
|-----------------|----------------------|--------------|----------|----------------|---|-------------|--------------|
| © | DISP (DWG1129) | | | © | BGMB (DWK1014) | | |
| SEMICONDUCTORS | | | | SEMICONDUCTORS | | | |
| D201 | LED | LN526YA | | IC201 | OP-AMP IC | NJM4558DX | |
| D202, 203 | LED | LN526RA(V) | | IC202 | E-YR IC | M5222L | |
| | | | | IC203 | LOGIC IC | TC74HC00AP | |
| | | | | Q201, 202 | TRANSISTOR | 2SC1740S | |
| | | | | D201, 202, 204 | DIODE | 1SS254 | |
| | | | | D203 | ZENER DIODE | MT25.1B | |
| © | PREB (DWK1013) | | | SWITCH | | | |
| SEMICONDUCTORS | | | | S201 | SWITCH (STEREO/MONO) | DSH-106 | |
| IC1 | LOGIC IC | TC4052BP | | | | | |
| C2, 3 | OP-AMP IC | NJM4558S | | | | | |
| Q1, 2 | TRANSISTOR | 2SC3311A | | | | | |
| Q3 | TRANSISTOR | 2SA933S | | | | | |
| Q4 | TRANSISTOR | 2SC1740S | | | | | |
| Q5 | TRANSISTOR | DTA124BS | | | | | |
| D1 | DIODE | 1SS254 | | | | | |
| D2 | ZENER DIODE | MT25.1B | | | | | |
| D3 | ZENER DIODE | MT25.1B/C | | | | | |
| CAPACITORS | | | | C201, 202 | ELECTR. CAPACITOR | CEANP010MS0 | |
| C1 | CERAMIC CAPACITOR | CKCYF103250 | | C203, 204 | ELECTR. CAPACITOR | CEAS010MS0 | |
| C10 | CERAMIC CAPACITOR | CGCYX473M25 | | C205, 208 | ELECTR. CAPACITOR | CEAS4RTM50 | |
| C11, 12 | ELECTR. CAPACITOR | CBAS474MS0 | | C207, 208 | ELECTROLYTIC CAPACIT | CEAS2R2MS0 | |
| C13-15 | ELECTR. CAPACITOR | CBAS4RTM50 | | C209 | ELECTROLYTIC CAPACIT | CEANP221MS0 | |
| C16 | MLYOR FILM CAPACITOR | QMA123JS0 | | C210, 211 | ELECTR. CAPACITOR | CEAL470M1S | |
| C17 | AUDIO FILM CAPACITOR | CKTIA473J50 | | C212 | CERAMIC CAPACITOR | CKDVB222K50 | |
| C18 | MLYOR FILM CAPACITOR | QMA122JS0 | | | | | |
| C19 | MLYOR FILM CAPACITOR | QMA682JS0 | | | | | |
| C2 | CERAMIC CAPACITOR | CKTIF103250 | | | | | |
| C20 | ELECTR. CAPACITOR | CBAS4RTM50 | | | | | |
| C21 | ELECTR. CAPACITOR | CEAS470M06 | | | | | |
| C22 | ELECTR. CAPACITOR | CEAS4RTM50 | | | | | |
| C23 | ELECTR. CAPACITOR | CBAS470M16 | | | | | |
| C24-26 | ELECTR. CAPACITOR | CBAS4RTM50 | | | | | |
| C27 | MLYOR FILM CAPACITOR | QMA122JS0 | | | | | |
| C28 | MLYOR FILM CAPACITOR | QMA682JS0 | | | | | |
| C29 | ELECTR. CAPACITOR | CEAS4RTM50 | | | | | |
| C30 | ELECTR. CAPACITOR | CEAS4RTM50 | | | | | |
| C31 | MLYOR FILM CAPACITOR | QMA123JS0 | | | | | |
| C32 | AUDIO FILM CAPACITOR | CKTIA473J50 | | | | | |
| C33, 34 | ELECTR. CAPACITOR | CEAS010MS0 | | | | | |
| C35 | CERAMIC CAPACITOR | CGCYX473M25 | | | | | |
| C36 | ELECTR. CAPACITOR | CEAS211M16 | | | | | |
| C4 | ELECTR. CAPACITOR | CBAS010MS0 | | | | | |
| C5 | CERAMIC CAPACITOR | CGCYX473M25 | | | | | |
| C6, 7 | ELECTR. CAPACITOR | CEAS470M16 | | | | | |
| C8, 9 | CERAMIC CAPACITOR | CGCYX473M25 | | | | | |
| RESISTORS | | | | RESISTORS | | | |
| VR1 | VARIABLE RESISTOR | DCS1013 | | S301-310 | LED | SLV-81MC3 | |
| VR2, 3 | VARIABLE RESISTOR | DCS1014 | | S311-314 | LED | SLV-81DC3 | |
| Other resistors | | RD1/6PM10C0J | | D315-322 | LED | SLV-81YC3 | |
| WBFT | | | | SWITCHES | | | |
| OTHERS | | | | S301-310 | SWITCH (1-10) | DSG1011 | |
| CN150, 151 | | | | S311-316 | SWITCH (CLEAR, BEST HITS ROTATION MENU) | RSG-155 | |
| | | | | | | | |
| | | | | RESISTORS | | | |
| | | | | All resistors | | | RD1/6PM10C0J |
| | | | | | | | |
| | | | | RMJB | | | |
| | | | | SEMICONDUCTOR | | | |
| | | | | D401-404 | ZENER DIODE | | MTZJ5.6B |
| | | | | COIL | | | |
| | | | | L401 | AXIAL INDUCTOR | | LAU010K |
| | | | | CAPACITORS | | | |
| | | | | C401-406 | CERAMIC CAPACITOR | | CKCYF103250 |
| | | | | RESISTORS | | | |
| | | | | R401-404 | CARBON FILM RESISTOR | | RD1/6PM221J |
| | | | | OTHERS | | | |
| | | | | SOCKET | (REMOTE CONTROL) | | VKN1072 |

| Mark No. | Description | Part No. | Mark No. | Description | Part No. |
|---|--------------|----------|-------------------------------------|-------------|--------------|
| WBJB | | | © POSS (DWX1110) | | |
| CAPACITORS | | | SEMICONDUCTOR | | |
| C101,102 CERAMIC CAPACITOR | CKCYF102Z50 | | D501 | | GPIA14 |
| C103 CERAMIC CAPACITOR | CKCYF103Z50 | | | | |
| OTHERS | | | CAPACITOR | | |
| CN101,102 TERMINAL (WALL BOX CONTROL TERMINAL) | DICA1004 | | C501 CERAMIC CAPACITOR | | CKPUYF223225 |
| RSSB | | | RESISTOR | | |
| SWITCH | | | R501 CARBONFILM RESISTOR | | RD1/6PM391J |
| S201 DIP SWITCH (FUNCTION) | DSX1011 | | | | |
| CAPACITORS | | | | | |
| C201,202 CERAMIC CAPACITOR | CKCYF102Z50 | | SENS | | |
| C203,204 CERAMIC CAPACITOR | CKCYF103Z50 | | SEMICONDUCTOR | | |
| RESISTOR | | | D701 LED (RED) | | SLR-54VRS5H |
| R201 CARBONFILM RESISTOR | RD1/6PM472J | | CAPACITOR | | |
| OTHERS | | | C701 CERAMIC CAPACITOR | | CKPUYF223225 |
| J201 SOCKET (DATA OUT) | DXN1087 | | OTHERS | | |
| IOJB | | | REMOTE SENSOR | | GPIU50X |
| SEMICONDUCTORS | | | | | |
| Q100,101 TRANSISTOR | 2SA1309A | | © CNTB (DWX1132) | | |
| CAPACITORS | | | SEMICONDUCTOR | | |
| C100,101 CERAMIC CAPACITOR | CKPUYB102K50 | | I601 | | GPIA30R |
| C102,103 CERAMIC CAPACITOR | CKCYF103Z50 | | CAPACITOR | | |
| RESISTORS | | | C801 CERAMIC CAPACITOR | | CKPUYF223225 |
| R100-103 CARBONFILM RESISTOR | RD1/6PM□□□J | | RESISTOR | | |
| OTHERS | | | R801 CARBONFILM RESISTOR | | RD1/6PM121J |
| J453 JACK (LINE IN/OUT) | RKB-020 | | LAMP | | |
| © BRAN (DWX1108) | | | | | |
| There is not supplied parts in this unit. | | | CAPACITORS | | |
| | | | △ C601,602 CAPACITOR (CERAMIC) | | RCG-009 |
| | | | △ C603,604 POWER CAPACITOR | | DCG1003 |
| © ROTA (DWX1109) | | | RESISTOR | | |
| SEMICONDUCTORS | | | △ R601,602 CARBON FILM RESISTOR | | RD1/4PM225J |
| Q401 DIGITAL TRANSISTOR | UN4112 | | OTHERS | | |
| Q402 TRANSISTOR | 2SD1762-F8 | | △ CN33 CONNECTOR | | SD-5277-02A |
| Q403 DIGITAL TRANSISTOR | UR4212 | | | | |
| Q404 TRANSISTOR | 2SB1185-F8 | | | | |
| D401,402 RECTIFIER DIODE | 1SR139-400 | | | | |
| CAPACITORS | | | © NETWORK ASSEMBLY (SWN1219) | | |
| C401 ELECTR. CAPACITOR | CEA1470MGR3 | | COILS | | |
| C402 CERAMIC CAPACITOR | CKPUYF223225 | | L1 (3.3mH) | | STH1100 |
| C403 ELECTROLYTIC CAPACIT | CEAS101M25 | | L3 (3.9mH) | | STH1021 |
| RESISTORS | | | L4 (0.22mH) | | STH-327 |
| R401-405 CARBONFILM RESISTOR | RD1/6PM□□□J | | CAPACITORS | | |
| | | | C1 | | CES4220KJ |
| | | | C2 | | CES4100KJ |
| | | | C4 | | CES4DX1R6KJ |
| | | | RESISTOR | | |
| | | | R4 | | RT10BAL100K |
| | | | OTHERS | | |
| | | | Br1 (1A) | | SSG-004 |

CD SECTION

NOTES:

- Parts without part number cannot be supplied.
- Parts marked by "●" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by $J = 5\%$, and $K = 10\%$).

560 $\Omega \rightarrow 56 \times 10^0 \rightarrow 561$ RD1/4PS 5[6]1J

47k $\Omega \rightarrow 47 \times 10^3 \rightarrow 473$ RD1/4PS 4[7]3J

0.5 $\Omega \rightarrow 0\text{P}5$ RN2H 0[R]5K

1 $\Omega \rightarrow 0\text{I}0$ RS1P 0[1]0K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k $\Omega \rightarrow 562 \times 10^3 \rightarrow 5621$ RN1/4SR 5[6]21J

| Mark | NO. | Description | Part NO. | Mark | NO. | Description | Part NO. |
|-------------------|-----|-------------------------|--------------|-----------------|-----|----------------------|-------------|
| EKEY | | | | EKEY | | | |
| SWITCHES | | | | SWITCHES | | | |
| S801-303 | | SWITCH (BJECl(A, B, C)) | DSG1009 | C17 | | ELECTR. CAPACITOR | CEAS330M16 |
| IC10 | | PRB AMP IC | CXA1081S | C18, 19 | | CERAMIC CAPACITOR | CKCYB102K50 |
| IC10 | | POWER OF AMP | TA725P | C2 | | NYLOR FILM CAPACITOR | CKCYA33S350 |
| IC11 | | SYSTEM PRESET IC | MS1953BL | C20 | | CERAMIC CAPACITOR | CKCYB102K50 |
| IC2 | | SERVO CONTROL IC | CXA1082AS | C21, 22 | | ELECTR. CAPACITOR | CEAS330M16 |
| IC3 | | RFM DEMODULATION IC | CXD11350Z | C23 | | ELECTR. CAPACITOR | CEAS10M650 |
| IC4 | | MEMORY IC | CXK5816P-1ZL | C24 | | CERAMIC CAPACITOR | CKCYB102K50 |
| IC5 | | MCU | PD0068B | C25 | | CERAMIC CAPACITOR | CKCYF103Z50 |
| IC6-8 | | POWER OF AMP | TA7256P | C26-29 | | ELECTR. CAPACITOR | CEAS330M16 |
| Q1 | | TRANSISTOR | DTA124ES | C3 | | NYLOR FILM CAPACITOR | CKMA102J50 |
| Q10 | | TRANSISTOR | DTC124BS | C30, 31 | | ELECTR. CAPACITOR | CEA5330M16 |
| Q11 | | TRANSISTOR | 2SC1740S | C32 | | ELECTR. CAPACITOR | CEA510M10 |
| Q12 | | TRANSISTOR | DTA124ES | C33 | | CERAMIC CAPACITOR | CCCHC90J50 |
| Q13 | | TRANSISTOR | 2SA933S | C34 | | NYLOR FILM CAPACITOR | CCMA472J50 |
| Q14 | | TRANSISTOR | DTA124ES | C35 | | CERAMIC CAPACITOR | CCCHC300J50 |
| Q15 | | TRANSISTOR | 2SC2497 | C36, 37 | | ELECTR. CAPACITOR | CEAS330M16 |
| Q16 | | TRANSISTOR | DTC124ES | C38 | | CERAMIC CAPACITOR | CCCHC300J50 |
| Q2 | | TRANSISTOR | 2SC2497 | C39 | | NYLOR FILM CAPACITOR | CKMA33S350 |
| Q3 | | TRANSISTOR | DTA124ES | C40 | | ELECTR. CAPACITOR | CEAS330M16 |
| Q4 | | TRANSISTOR | 2SC2497 | C41 | | NYLOR FILM CAPACITOR | CKMA332J50 |
| Q5 | | TRANSISTOR | DTA124ES | C42 | | NYLOR FILM CAPACITOR | CKMA103J50 |
| Q6 | | TRANSISTOR | 2SC2497 | C43 | | ELECTR. CAPACITOR | CEAS47M650 |
| Q7, 8 | | TRANSISTOR | 2SC1740S | C44 | | NYLOR FILM CAPACITOR | CKMA103J50 |
| Q9 | | TRANSISTOR | 2SA1399 | C45 | | ELECTR. CAPACITOR | CEAS330M16 |
| D4-7 | | DIODE | 1SS254 | C46 | | NYLOR FILM CAPACITOR | CKMA272J50 |
| CAPACITORS | | | | C47, 48 | | ELECTR. CAPACITOR | CEAS330M16 |
| C1 | | ELECTR. CAPACITOR | CEAS47M650 | C49 | | NYLOR FILM CAPACITOR | CKMA333J50 |
| C10, 11 | | CERAMIC CAPACITOR | CCCHC3100J50 | C50 | | ELECTR. CAPACITOR | CEAS330M16 |
| C12, 13 | | ELECTR. CAPACITOR | CEAS330M16 | C51 | | NYLOR FILM CAPACITOR | CCMA472J50 |
| C14 | | CERAMIC CAPACITOR | CKCYF103Z50 | C52, 53 | | NYLOR FILM CAPACITOR | CKMA104J50 |
| C15, 16 | | CERAMIC CAPACITOR | CCCHC220J50 | C54 | | NYLOR FILM CAPACITOR | CKMA102J50 |
| | | | | C55 | | ELECTR. CAPACITOR | CEAS47M650 |
| | | | | C56 | | NYLOR FILM CAPACITOR | CKMA104J50 |
| | | | | C57 | | ELECTR. CAPACITOR | CEAS330M16 |
| | | | | C58 | | NYLOR FILM CAPACITOR | CKMA333J50 |
| | | | | C59 | | NYLOR FILM CAPACITOR | CKMA104J50 |
| | | | | C60 | | ELECTROLYTIC CAPACIT | CEANP47RM50 |
| | | | | C61, 62 | | ELECTR. CAPACITOR | CEAS330M16 |
| | | | | C63 | | NYLOR FILM CAPACITOR | CKMA103J50 |
| | | | | C64 | | ELECTR. CAPACITOR | CEAS330M16 |

| Mark | No. | Description | Part No. |
|----------------------|------------|--------------------------------|--------------|
| C65 | | ELECTR. CAPACITOR | CEAS101M10 |
| C66 | | MYLOR FILM CAPACITOR | CQMA472J50 |
| C67 | | ELECTR. CAPACITOR | CEAS3R3M50 |
| C68, 69 | | ELECTR. CAPACITOR | CEAS330M16 |
| C70-75 | | CERAMIC CAPACITOR | COCC0221J50 |
| C76-78 | | ELECTR. CAPACITOR | CEAS0P010M50 |
| C79, 80 | | ELECTR. CAPACITOR | CEAS330M16 |
| C81 | | CERAMIC CAPACITOR | CKCYF103250 |
| RESISTORS | | | |
| VR2 | | SEMI-FIXED RESISTOR | VRTB6V5103 |
| VR3-7 | VR | | VRTB6V5223 |
| VR8 | VR | | VRTB6V5102 |
| Other resistors | | | RD1/6PM□□□J |
| OTHERS | | | |
| D1, 2 | | DELAY LINE | PTF1012 |
| X1 | | CRYSTAL RESONATOR | DSS1010 |
| X2 | | CRYSTAL RESONATOR | PSS-012 |
| CN4 | | | B8P-SHP-1AA |
| CN7 | | | \$597-17APB |
| CN8 | | IC SOCKET | B8P-SHP-1AA |
| | | | VK01-029 |
| DJAK | | | |
| CAPACITOR | | | |
| C501 | | CAPACITOR ARRAY | DCG1007 |
| OTHERS | | | |
| JA501 | | SOCKET | VKN1072 |
| PJAK | | | |
| OTHERS | | | |
| JA601 | JACK | | PMK1009 |
| MJSW | | | |
| SWITCHES | | | |
| S801-803 | | PUSH SWITCH (MJ LOCK(1, 2, 3)) | PSH1008 |
| S804-806 | | SWITCH (MJ SENS(1, 2, 3)) | PSH1005 |
| SENS | | | |
| SEMICONDUCTOR | | | |
| Q901 | | | GP1A52HR |
| SWITCH | | | |
| S901 | (UP LIMIT) | | RSP1007 |
| CAPACITOR | | | |
| C901 | | ELECTROLYTIC CAPACIT | CEJA100M16 |
| RESISTORS | | | |
| R901, 902 | | CARBON FILM RESISTER | RD1/6PM□□□J |

| Mark | No. | Description | Part No. |
|---|-----|----------------------|-------------|
| REJC | | | |
| There is not supplied parts in this unit. | | | |
| FREC | | | |
| OTHERS | | | |
| CN401, 402 | | CONNECTOR | 5597-17APB |
| HRMB | | | |
| There is not supplied parts in this unit. | | | |
| RMJB | | | |
| OTHERS | | | |
| MINI JACK 3P | | | DKN1028 |
| © ANLG (DWX1155) | | | |
| SEMICONDUCTORS | | | |
| IC201 | | D/A CONVERTER | LC7881-C |
| IC202, 203 | | LINEAR IC | NJM4558D |
| IC204 | | REGULATOR IC | NJM79M05FA |
| IC205 | | REGULATOR IC | NJM7805FA |
| Q201, 202 | | TRANSISTOR | DTC124BS |
| Q203 | | TRANSISTOR | DTA124ES |
| Q204 | | TRANSISTOR | DTC124BS |
| Q205, 206 | | TRANSISTOR | 2SD1302 |
| Q207, 208 | | TRANSISTOR | 2SC1740S |
| Q209 | | TRANSISTOR | DTA124ES |
| D201 | | BRIDGE RECTIFIER | 2WU2-5008-L |
| COIL AND FILTERS | | | |
| L201 | | FILTER | VTL-157 |
| F202-204 | | | VTH1001 |
| CAPACITORS | | | |
| C201, 202 | | CAPACITOR (CERAMIC) | RCG-009 |
| C203 | | CAPACITOR (ALUMINUM) | VCH1050 |
| C204 | | ELECTROLYTIC CAPACIT | CEAS222M16 |
| C205 | | ELECTR. CAPACITOR | CEAS120M10 |
| C206 | | ELECTR. CAPACITOR | CEAS471M10 |
| C207, 208 | | MYLOR FILM CAPACITOR | CQMA102J50 |
| C209, 210 | | ELECTR. CAPACITOR | CRAS220M50 |
| C211, 212 | | MYLOR FILM CAPACITOR | CQMA821J50 |
| C213, 214 | | MYLOR FILM CAPACITOR | CQMA471J50 |
| C215, 216 | | MYLOR FILM CAPACITOR | CQMA472J50 |
| C217, 218 | | MYLOR FILM CAPACITOR | CQMA683J50 |
| C219, 220 | | ELECTR. CAPACITOR | CRAS220M50 |
| C221-225 | | ELECTR. CAPACITOR | CEAS330M16 |
| C226 | | ELECTR. CAPACITOR | CRAS101M10 |
| C227 | | CERAMIC CAPACITOR | CKCYF103250 |
| RESISTORS | | | |
| All resistors | | | |
| RD1/6PM□□□J | | | |

7. ADJUSTMENTS

7.1 MECHANICAL ADJUSTMENTS

7.1.1 MAIN SECTION

- Synchronous adjustment of three surfaces of the menu (Fig. 7-1)

PREPARATIONS

- Adjust without installing the motor (menu).
- Fix the center pulley to the menu shaft with the screws.
- (1) Apply synchro belt between synchro pulley and center pulley both on the right and left sides.
- (2) While applying a spring (tension) to the underframe and tension plate, apply a tension to the synchro belt.
- (3) Fix the tension plate to the underframe with screw ①.
- (4) By placing a flat plate such as a ruler on them, align the three surfaces of the menu with each other on the same level.
- (5) Fix the menu shaft to the synchro pulley using a hexagonal wrench.
- (6) Remove the plate placed on the menu and check the following items while turning the menu by hand.
 1. Check that the three surfaces of the menu rotate smoothly.
 2. Check that all the three surfaces align with each other on the same level after turning the menu shaft once.

• Adjustment of the stop position of menu rotation [PREPARATIONS]

- Loosen screw ② which holds the encoder disc using a hexagonal wrench.
- Loosen screw ② which holds the adjustment plate.
- Adjust with the motor (menu) attached.
- (1) Set the gap between the encoder disc and photo interrupter of the motor (menu) to $1\frac{1}{16}$ mm. (Fig. 7-2)
- (2) Fix the screw of the encoder disc by tightening with a hex wrench.
- (3) Turn screw ② so that the carved mark on the adjustment plate aligns with the underframe. Then temporarily tighten screw ②.
- (4) Push the ROTATE MENU key on the front panel of the main unit so that menu rotates. Then, perform the following adjustments depending on the condition. (Fig. 7-3)
- When the menu stops after extending the front
 - Loosen screw ②, then tighten screw ② turning it clockwise.
- When menu stops before reaching the front
 - Loosen screw ② and turn screw ② counterclockwise to loosen it.
- (5) Turn the menu again and firmly tighten screw ② when the menu stops directing its surfaces to the front. (Fig. 7-4 ②)
- (6) Finally, turn the menu and check that the menu stops directing all of its three surfaces to the front at every 120° rotation.

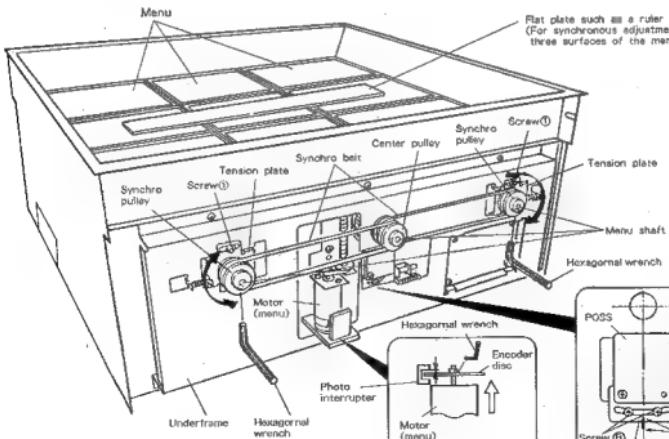


Fig. 7-1

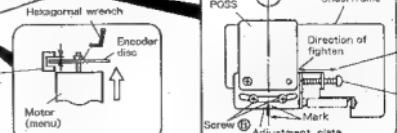


Fig. 7-2

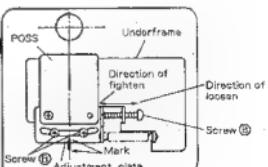


Fig. 7-3

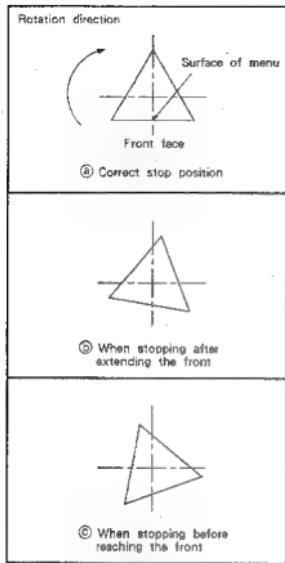


Fig. 7-4

7.1.2 CD SECTION

PREPARATIONS

- Set a magazine in the first and third modules of the CD main unit.
- Connect the remote control unit (RU-V101) to the CD main unit.
- 1. Rough adjustment of the select position
 - Set the distance from the upper side of the sensor plate to that of the main chassis to 7mm by turning screw ④.
- 2. Adjustment of the select position
 - First, proceed as follows.
 - Press the 10keys in the sequence of [1]+[8]+STILL/STEP \blacktriangleright (DISC SELECT) key + STILL/STEP \blacktriangleleft (DISC RETURN) key. When the operation is completed, check that the gap between the top of the rotation lever and the upper side of the sixth tray in the magazine is $0.3\text{ }^{\pm}0.2$.
 - If the distance is not within the specified range, turn screw ④ to adjust the position of the sensor plate and press the 10keys again in the sequence of [1]+[8]+STILL/STEP \blacktriangleright (DISC SELECT) key + STILL/STEP \blacktriangleleft (DISC RETURN) key until the distance comes within the specified range.
 - Push the 10keys in the sequence of [6]+STILL/STEP \blacktriangleright (DISC SELECT) key + STILL/STEP \blacktriangleleft (DISC RETURN) key and check that the gap between the top of the rotation lever and the upper side of the sixth tray in the magazine is $0.3\text{mm} \pm 0.1\text{mm}$.

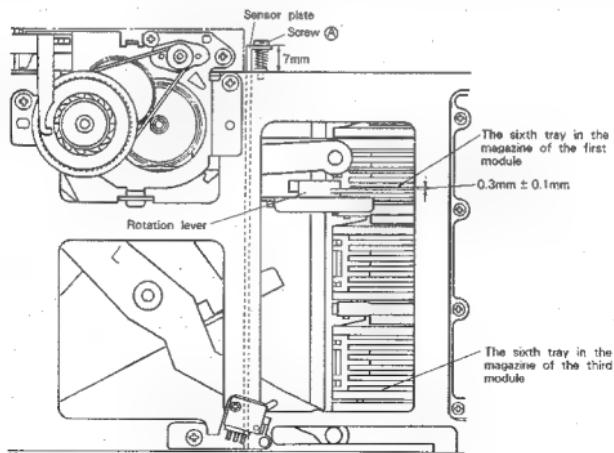


Fig. 7-5

7.2 ELECTRICAL ADJUSTMENTS

The adjustment items of this model should be performed in the order as shown below.

• Adjustment and check Items

1. Tracking offset focus offset and RF offset adjustment
2. RF level adjustment
3. LD (Laser Diode) output power confirmation
4. Focus lock and spindle lock confirmation
5. Grating adjustment
6. Tracking balance adjustment
7. Tangential adjustment
8. Focus gain adjustment
9. Tracking gain adjustment
10. VCO free-run frequency adjustment
11. Method to confirm S character (FOCUS ERROR)

• Measuring Equipment

1. Dual trace oscilloscope
2. Laser power meter
3. Test disc (YEDS-7)
4. Tracking balance adjustment filter
5. Loop gain adjustment filter
6. Signal generator
7. Frequency counter
8. Other general tools
9. Remote control unit (RU-V101)

• Service Mode

The CD main unit can be operated independently when remote control unit (RU-V101) is connected to the unit.

For the operation, refer to Service manual (1) (ARP2047) : Service Mode (page 14).

Note: Before operating the remote control unit (RU-V101), move the mechanism by using the 10keys + STILL/STEP II (DISC SELECT) key to the position where the test disc has been placed.

• Adjustment VRs and their names

VR1 : Laser power
 VR2 : RF offset (RF.OFS)
 VR3 : Focus gain (FCS.GAN)
 VR4 : Tracking gain (TRK.GAN)
 VR5 : Tracking balance (TRK.BAL)
 VR6 : Focus offset (FCS.OFS)
 VR7 : Tracking offset (TRK.OFS)
 VR8 : VCO adjustment (VCO.ADJ)

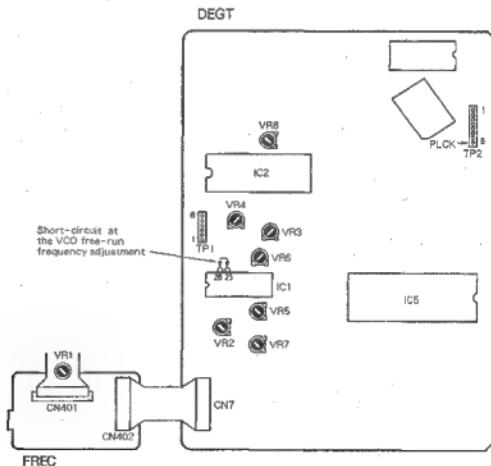


Fig. 7-6 Adjusting point

| Step No. | Oscilloscope Setting | | Test Points | Adjusting Points | Check items/ Adjustment specifications | Adjustment procedure |
|---|----------------------|--------------|--|---|---|---|
| | V | H | | | | |
| 1 TRACKING OFFSET, FOCUS OFFSET AND RF OFFSET ADJUSTMENT | | | | | | |
| | | | TP1 Pin 2 (TRK. ERR) TP1 Pin 6 (FCS. ERR) TP1 Pin 1 (RF OUTPUT) | VR5 (TRK. BAL) VR7 (TRK. OFS) VR6 (FCS. OFS) VR2 (RF. OFS) | Tracking offset 45° 0V ± 50mV FOCUS offset 0V ± 50mV RF offset 100mV ± 50mV | <ul style="list-style-type: none"> Set to Service mode. Turn VR5 TRK. BAL (Tracking balance) volume clockwise 45° from the center. Adjust with VR7 TRK. OFS (Tracking offset) volume so that the voltage of pin 2 TRK. ERR (Tracking error) of TP1 becomes 0V ± 50mV. Adjust VR6 FCS. OFS (focus offset) so that the FCS. ERR (focus error) voltage at TP1 pin 6 becomes 0V ± 50mV. Adjust VR2 RF. OFS (RF offset) so that the RF output voltage at TP1 pin 1 becomes 100mV ± 50mV. |
| 2 RF LEVEL ADJUSTMENT | | | | | | |
| | | | TP1 Pin 1 (RF) | VR1 Laser power | 1.5Vp-p $^{+0.2V}_{-0V}$ | <ul style="list-style-type: none"> Set to Service mode. Play TEST disc and connect probe of an oscilloscope to pin 1 RF (RF output) of TP1 and measure the P-P voltage of RF waveform. Adjust VR1 (Laser power) so that the value is within 1.5Vp-p $^{+0.2V}_{-0V}$. |
| 3 LD (LASER DIODE) OUTPUT POWER CONFIRMATION | | | | | | |
| | | | | | Confirmation : less than 0.13mW | <ul style="list-style-type: none"> Set to Service mode. Press [MULTI-SPEED+] key + [4] and turn ON LD (laser diode). Place sensor of the laser power meter immediately above the object lens and confirm that the output power of the LD is less than 0.13mW. |
| 4 FOCUS LOCK AND SPINDLE LOCK CONFIRMATION | | | | | | |
| | 0.5V/div | 100msec /div | TP1 Pin 1 (RF output) | | RF output exists Normal rotation | <ul style="list-style-type: none"> Set TEST disc. Set to Service mode. Shift the pickup close to the center of the disc by pressing the [MULTI-SPEED+] key + [4]. * Note that this step must be performed. Observe pin 1 RF (RF output) of TP1 with an oscilloscope and confirm that the RF signal is output after pressing the [MULTI-SPEED+] key + [4]. Press [MULTI-SPEED+] key + [2] and be sure that the disc rotates in normal direction at almost the specified speed (as it is close to the center of the disc, the rotating speed is around 300 rpm) and not rotates abnormally or inversely. |

| Step No. | Oscilloscope Setting | Test Points | Adjusting Points | Check items/ Adjustment specifications | Adjustment procedure |
|-----------------------------|----------------------|-------------|------------------|--|--|
| 5 GRATING ADJUSTMENT | | | | | |
| | | | | | <ul style="list-style-type: none"> Set to Service mode. Shift the pickup close to the center of the disc by pressing [-MULTI-SPEED+] key + [4] so that the grating adjustment screw of the pickup can be seen through the oval hole of the upper side of the servo mechanism. Insert the Θ screwdriver into the adjusting hole from the upper side of the mechanism as shown in Fig. 7-7, and confirm that the grating screw turns. Press [-MULTI-SPEED+] key + [1] and [-MULTI-SPEED+] key + [2] sequentially and close the focus servo and spindle servo. (Do not close the tracking servo.) Observe the waveform of pin 2 TRK. ERR (Tracking error) of TP1 with an oscilloscope. At this point, insert a 4kHz cutoff low-pass filter. (Fig. 7-8) |

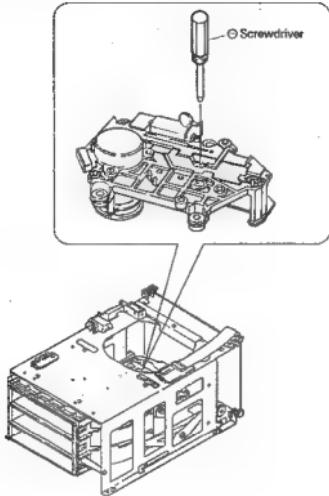


Fig. 7-7

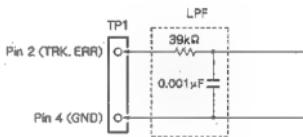


Fig. 7-8

| | | | | |
|----------|---------------|----------------------------|---------|-------------------|
| 0.5V/div | 5mscc /div | TP1 Pin 2 (TRK. ERR) | Grating | Null point |
| | | | Grating | Maximum amplitude |

- Turn the Θ screwdriver and find null point. (Photo. 7-1)
- Then, turn slowly the Θ screwdriver counterclockwise from the null point and adjust at the point where the waveform (Tracking error signal) firstly becomes maximum amplitude. (See Photo. 7-2.)

Note :

- If the Θ screwdriver is pressed strongly, the pickup moves toward disc center, accordingly adjustment becomes difficult.
- Finally, be sure to confirm that the tracking error signal (at this time, 4kHz of cutoff low-pass filter is not inserted) when the pickup is moved toward the disc center and the P-F voltage of the tracking error signal at the outer circumference of the disc are not varied greatly. When the level is deviated over $\pm 10\%$, adjust again by turning grating screw to the maximum error amplitude point.

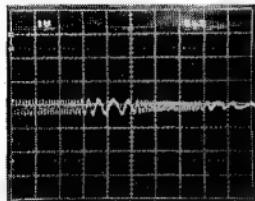


Photo. 7-1
Null point

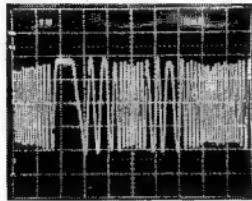


Photo. 7-2
Maximum amplitude

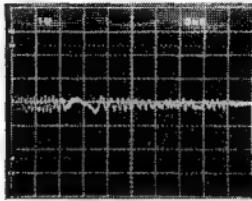


Photo. 7-3
This is not the null-point waveform

| Step No. | Oscilloscope Setting | Test Points | Adjusting Points | Check items/ Adjustment specifications | Adjustment procedure |
|--------------------------------------|------------------------|----------------------------|-------------------|--|--|
| 6 TRACKING BALANCE ADJUSTMENT | | | | | |
| | 0.5V/div 5msec /div | TP1 Pin 2 (TRK. ERR) | VR5 (TRK. BAL) | (TRK. ERR) | <ul style="list-style-type: none"> Set the TEST disc. Set to Service mode. Shift the carriage close to the center of the disc by pressing [-MULTI-SPEED+] key + [4]. Press [-MULTI-SPEED+] key + [1] and [-MULTI-SPEED+] key + [2] to start turning the disc. Observe pin 2 TRK. ERR (Tracking error) of TP1 with an oscilloscope and adjust with VR5 TRK. BAL (Tracking balance) volume so that the DC component of the tracking error disappears. <p>Note: Before proceeding with the above adjustments, be sure to adjust the tracking error offset.</p> |

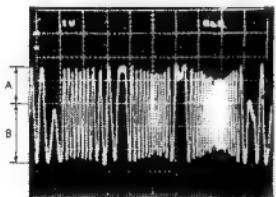


Photo. 7-4 DC elements mixed in signal

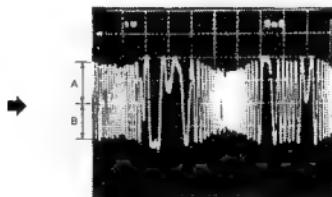
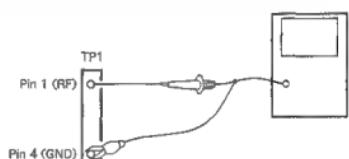
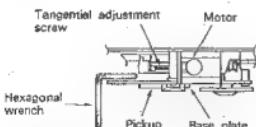


Photo. 7-5 DC elements eliminated

| Step No. | Oscilloscope Setting | Test Points | Adjusting Points | Check items/ Adjustment specifications | Adjustment procedure |
|--------------------------------|----------------------|-----------------------------|-----------------------------------|---|---|
| | V | H | | | |
| 7 TANGENTIAL ADJUSTMENT | | | | | |
| | 200nsec /div | TP1 Pin 1 (RF output) | Tangential adjustment screw | Best eye pattern | <ul style="list-style-type: none"> Set the TEST disc. Set to Service mode. Shift the pickup close to the center of the disc by pressing [-MULTI-SPEED+] key + [4]. Press [-MULTI-SPEED+] key + [1], [-MULTI-SPEED+] key + [2] and [-MULTI-SPEED+] key + [3] sequentially, and close all the servos. (Pause indicator lights up.) Observe pin 1 RF (RF output) of TP1 with an oscilloscope and adjust with the tangential screw so that the eye pattern becomes clear. (Fig. 7-9 and 7-10) The adjusting point is the middle point between the point where the eye pattern becomes deteriorate by turning the tangential screw clockwise and the point where the eye pattern becomes deteriorate by turning the tangential screw counterclockwise. As a criterion, observe that the overall waveform is clear and one of the diamond shapes within the eye pattern (Photo. 7-7), and adjust at as an optimum point where the diamond shape is seen relatively fine line.  <p>Fig. 7-9</p> <p>Note : During the adjustment, hold hexagonal wrench to upward so as to keep the pickup body not goes down.</p> |



In the figure below, the top and bottom is opposite to that of the actual product.

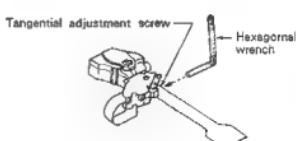


Fig. 7-10 Tangential adjustment

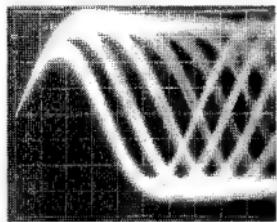


Photo. 7-6

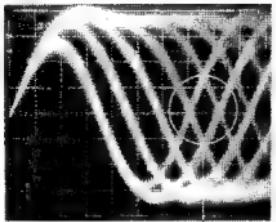


Photo. 7-7

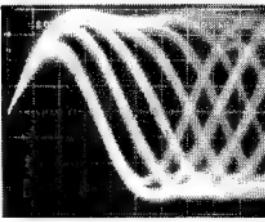


Photo. 7-8

Part to be observed



Unsatisfactory

Optimum
adjustment

Unsatisfactory

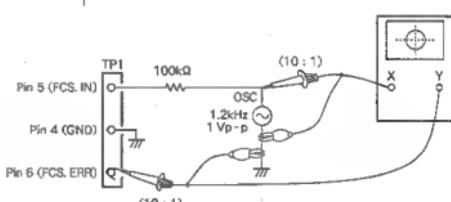
| Step No. | Oscilloscope Setting | Test Points | Adjusting Points | Check items/ Adjustment specifications | Adjustment procedure |
|----------------------------------|--|---|----------------------|--|--|
| | V | | | | |
| III FOCUS GAIN ADJUSTMENT | | | | | |
| | 20mV/div, 5mV/div, CH1 (X), CH2 (Y) (Probe 10:1) | X axis: TP1 Pin 5 (FCS. IN) Y axis: TP1 Pin 6 (FCS. ERR) | VR3 (PCS. GAN) | Phase difference 90° | <ul style="list-style-type: none"> In the POWER OFF state, connect an oscilloscope and oscillator as shown in Fig. 7-11. Set the unit to the normal PLAY mode. Turn the POWER of oscillator ON and output 1.2kHz 1Vp-p. <p>Note: Depending upon oscillators, some of them output DC when their power turned ON. Therefore, it is desirable to connect oscillator after turning the power ON.</p> <ul style="list-style-type: none"> Adjust with VR3 FCS.GAN (Focus gain) volume so that the lissajous figure of the oscilloscope becomes horizontal circle (Phase difference 90°).  |

Fig. 7-11

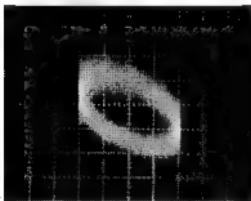


Photo. 7-9
Gain overcompensated

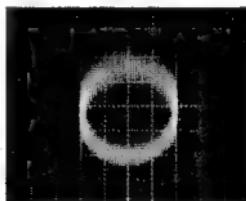


Photo. 7-10
Gain optimum

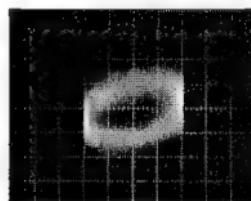


Photo. 7-11
Gain undercompensated

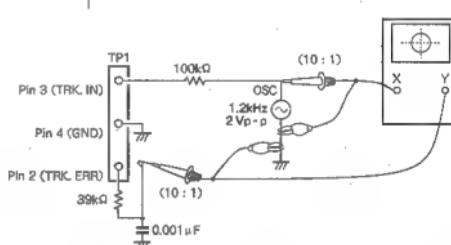
| Step No. | Oscilloscope Setting | Test Points | Adjusting Points | Check items/ Adjustment specifications | Adjustment procedure |
|-----------------------------------|---|---|-------------------|--|---|
| | | | | | V H |
| B TRACKING GAIN ADJUSTMENT | | | | | |
| | 50mV/div, 5mV/div, CH1 (X), CH2 (Y), (Probe 10 : 1) | X axis : TP1 Pin 3 (TRK. IN) Y axis : TP1 Pin 2 (TRK. ERR) | VR4 (TRK. GAN) | Phase difference 90° | <ul style="list-style-type: none"> In the POWER OFF state, connect an oscilloscope and oscillator as shown in Fig. 7-12. Set the unit to the normal PLAY mode. Turn the POWER of oscillator ON and output 1.2kHz 2Vp-p. <p>Note : Depending upon oscillators, some of them output DC when their power turned ON. Therefore, it is desirable to connect oscillator after turning the power ON.</p> <ul style="list-style-type: none"> Adjust with VR4 TRK. GAN (Tracking gain) volume so that the lissajous figure of the oscilloscope becomes horizontal circle (phase difference 90°).  |

Fig. 7-12

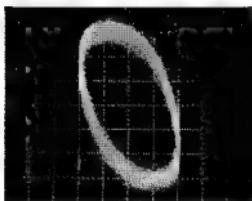


Photo. 7-12
Gain overcompensated

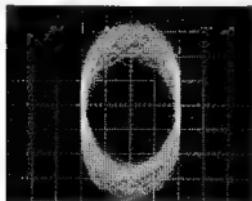


Photo. 7-13
Gain optimum

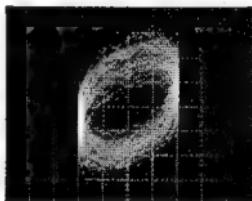
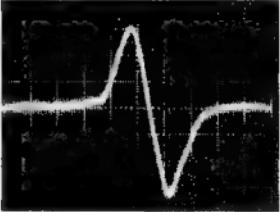


Photo. 7-14
Gain undercompensated

| Step No. | Oscilloscope Setting | Test Points | Adjusting Points | Check items/ Adjustment specifications | Adjustment procedure | | | |
|---|----------------------|----------------------------|-------------------|---|--|---|--|--|
| | | | | | V | H | | |
| 10 VCO FREE RUN FREQUENCY ADJUSTMENT | | | | | | | | |
| | | TP2 Pin 8 (PLCK) | VR8 (VCO. ADJ) | 4.275 ± 0.01MHz | <ul style="list-style-type: none"> Set to Service mode. Short-circuit between pin 25 and pin 26 of IC1 in the DEGT assembly with \ominus screwdriver, etc. (Fig. 7-8) Connect frequency counter, which is measurable over 10MHz, to pin 8 of TP2 (PLCK). Adjust with VR8 VCO. ADJ (VCO adjustment) volume so that the value of frequency counter becomes 4.275 ± 0.01MHz. | | | |
| 11 METHOD TO CONFIRM S CHARACTER (FOCUS ERROR) | | | | | | | | |
| | | TP1 Pin 6 (FCS. ERR) | | | <ul style="list-style-type: none"> Set to Service mode. Short-circuit between pin 5 FCS.IN (Focus in) of TP1 and GND. Press \square MULTI-SPEED+ key + \square and observe the waveform of pin 6 FCS.ERR (Focus error) of TP1 at that time with an oscilloscope. | | | |
|  | | | | | | | | |
| Photo. 7-15 Focus error | | | | | | | | |

7. RÉGLAGES

7.1 RÉGLAGES MÉCANIQUES

7.1.1 SECTION PRINCIPALE

- **Réglages synchronisé de trois surfaces du menu** (Fig. 7-1)

PRÉPARATIFS

- Ajuster sans installer le moteur (menu).
- Fixer la poulie centrale à l'arbre de menu à l'aide des vis.
- (1) Placer des ceintures de synchronisation entre la poulie centrale et les poulies de synchronisation droite et gauche.
- (2) Tout en appliquant une tension sur le châssis et la plaque de tension, tirer sur la ceinture de synchronisation.
- (3) Fixer la plaque de tension au châssis avec une vis ①.
- (4) Tout en placant une plaque plate tel qu'une règle entre les surfaces du menu, les aligner au même niveau.
- (5) Fixer l'arbre de menu à la poulie de synchronisation en utilisant la clé hexagonale.
- (6) Retirer la plaque placée dans le menu et vérifier les points suivants en tournant le menu à la main.
 1. Vérifier que les trois surfaces du menu pivotent de façon régulière.
 2. Vérifier que les trois surfaces sont alignées au même niveau après une rotation de l'arbre du menu.

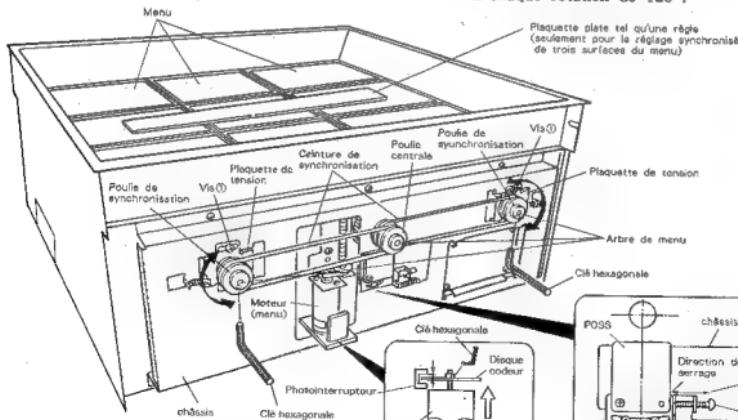


Fig. 7-1

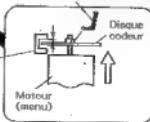


Fig. 7-2

- **Réglage de la position d'arrêt de la rotation du menu PRÉPARATIFS**

- Desserrer la vis ④ maintenant le disque codeur en utilisant la clé hexagonale.
- Desserrer la vis ④ maintenant la plaque de réglage.
- Ajuster avec le moteur (menu) joint.
- (1) Régler le jeu entre le disque codeur et le photointerrupteur du moteur (menu) à 1.6 mm. (Fig. 7-2)
- (2) Fixer la vis du disque codeur en la serrant à l'aide d'une clé hexagonale.
- (3) Tourner la vis ④ de manière à ce que le repère ciselé sur la plaque de réglage soit aligné avec le châssis. Puis, serrer temporairement la vis ④.
- (4) Pousser la touche ROTATE MENU sur le panneau avant de l'appareil principal de manière à faire tourner le menu. Effectuer, ensuite, les réglages suivants en fonction des conditions. (Fig. 7-3)
- Lorsque le menu s'arrête en dépassant l'avant
 - Desserrer la vis ④, puis serrer la vis ④ en la tournant dans le sens des aiguilles d'une montre.
 - Lorsque le menu s'arrête avant d'atteindre l'avant
 - Desserrer la vis ④, puis tourner la vis ④ dans le sens contraire des aiguilles d'une montre pour la desserrer.
- (5) Tourner le menu de nouveau, et serrer fermement la vis ④ lorsque l'il s'arrête en dirigeant ses surfaces vers l'avant. (Fig. 7-4 ④)
- (6) Finalement, tourner le menu et vérifier qu'il s'arrête en dirigeant toutes ses trois surfaces vers l'avant à chaque rotation de 120°.

Plaquette plate tel qu'une règle
(seulement pour la réglage synchronisé
de trois surfaces du menu)

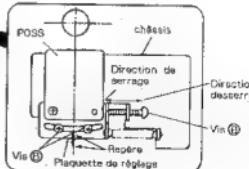


Fig. 7-3

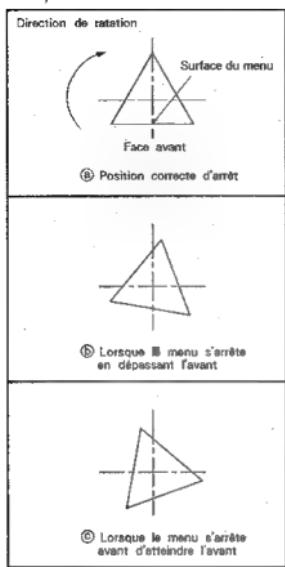


Fig. 7-4

7.1.2 SECTION CD

PRÉPARATIFS

- Mettre un magasin dans les première et sixième modules de l'appareil principal CD.
- Brancher la télécommande RU-V101 sur l'appareil principal CD.
- 1. Réglage approximatif de la position de sélection
 - (1) Régler le jeu entre le côté supérieur de la plaque de détecteur et celui du châssis principal à 7 mm en serrant la vis ④.
- 2. Réglage de la position de sélection
 - (1) Procéder comme suit :
 - ① Appuyer sur les touches par ordre ① + ⑧ + STILL/STEP ▶ (DISC SELECT) + STILL/STEP ◀ (DISC RETURN). Après cette opération, vérifier que le jeu entre le haut du levier de rotation et le côté supérieur du sixième plateau dans le magasin est de $0.3^{+0.2}_{-0}$.
 - ② Si le jeu est hors de la gamme spécifiée, tourner la vis ④ pour régler la position de la plaque de détecteur, et appuyer de nouveau sur les touches par ordre ① + ⑧ + STILL/STEP ▶ (DISC SELECT) + STILL/STEP ◀ (DISC RETURN) de façon que le jeu soit dans la gamme spécifiée.
 - ③ Appuyer sur les touches par ordre ⑧ + STILL/STEP ▶ (DISC SELECT) + STILL/STEP ◀ (DISC RETURN), et vérifier que le jeu entre le haut du levier de rotation et le côté supérieur du sixième plateau dans le magasin est de $0.3\text{mm} \pm 0.1\text{mm}$.

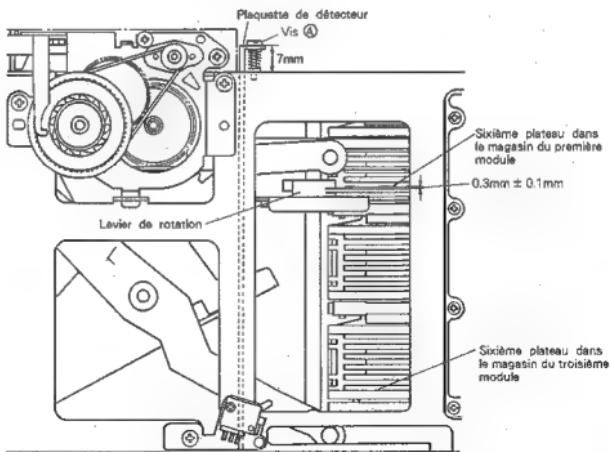


Fig. 7-5

7.2 RÉGLAGES ELECTRIQUESS

Les réglages pour ce modèle doivent être réalisés dans l'ordre indiqué ci-dessous.

• Réglages et vérifications à effectuer

1. Réglages de l'offset de centrage de piste, de l'offset de focalisation et de l'offset RF.
2. Réglage du niveau RF
3. Vérification de la puissance de sortie de la diode laser (LD)
4. Vérification du verrouillage de focalisation et du verrouillage de moyeu
5. Réglage du réseau
6. Réglage de l'équilibrage de centrage de piste
7. Réglage tangentiel
8. Réglage du gain de focalisation
9. Réglage du gain de centrage de piste
10. Réglage de la fréquence propre du VCO
11. Méthode de contrôle de la caractéristique S (erreur de focalisation)

• Matériel de mesure

1. Oscilloscope double trace
2. Appareil de mesure pour puissance laser
3. Disque d'essai (YEDS-7)
4. Filtre de réglage pour équilibrage de centrage de piste
5. Filtre de réglage pour gain de boucle
6. Générateur de signal
7. Fréquencemètre
8. Outilage général divers
9. Télécommande (RU-V101)

• Mode d'entretien

L'appareil principal CD peut être fonctionné indépendamment quand la télécommande RU-V101 est branchée sur l'appareil. Pour les détails sur le fonctionnement, voir "Mode d'entretien" (page 14) du manuel d'entretien (1) (ARP2047).

Remarque :

Avant le fonctionnement avec la télécommande RU-V101, déplacer le mécanisme à la position où le disque d'essai est placé en appuyant sur une des touches numériques et la touche STILL/STEP \blacktriangleright (DISC SELECT).

• Dispositifs d'ajustement et nomenclature

VR1 : Puissance laser
 VR2 : Offset RF (RF.OFS)
 VR3 : Gain de focalisation (FCS.GAN)
 VR4 : Gain de centrage de piste (TRK.GAN)
 VR5 : Équilibrage de centrage de piste (TRK.BAL)
 VR6 : Décalage de focalisation (FCS.OFS)
 VR7 : Décalage de centrage de piste (TRK.OFS)
 VR8 : Réglage du VCO (VCO.ADJ)

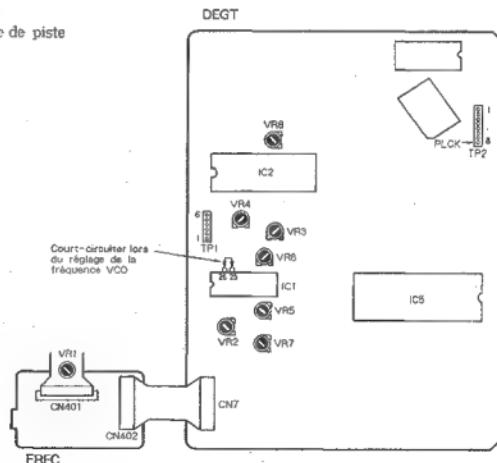
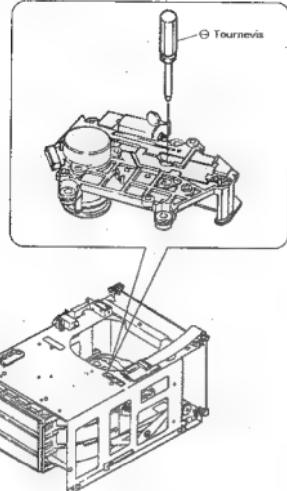
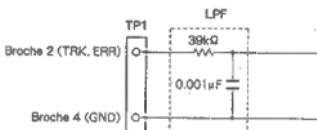


Fig. 7-6 Point de réglage

| Pas No. | Réglage de l'oscilloscope | Points d'essai | Points de réglage | Points de contrôle /spécifications de réglage | Méthode de réglage |
|----------|---|-------------------------|--------------------------------|---|---|
| | V | H | | | |
| 1 | RÉGLAGES DE L'OFFSET DE CENTRAGE DE PISTE, DE L'OFFSET DE FOCALISATION ET DE L'OFFSET RF | | | | |
| | | | VR5 (TRK.BAL) | Offset de centrage de piste 45° 0V ± 50mV | <ul style="list-style-type: none"> Régler le mode d'essai (TEST). tourner le potentiomètre VR5 TRK.BAL (équilibrage de centrage de piste) de 45° depuis le centre dans le sens des aiguilles d'une montre. Ajuster le potentiomètre VR7 TRK.OFS (décalage de centrage de piste) de façon à ce que la tension à la broche 2 TRK.ERR (erreur de centrage de piste) de TP1 devienne égale à 0 V ± 50 mV. Régler VR6 FCS.OFS (offset de focalisation) de manière à ce que la tension de FCS.ERR (erreur de focalisation) relevée sur la broche 6 de TP1 soit de 0 V ± 50 mV. Régler VR2 RF.OFS (offset RF) de manière à ce que la tension de RF OUTPUT (sortie RF) relevée sur la broche 1 de TP1 soit de 100 mV ± 50 mV. |
| 2 | RÉGLAGE DU NIVEAU RF | | | | |
| | | TP1 Broche 1 (RF) | VR1 Puissance laser | 1.5 Vc-c $\pm 50\%$ | <ul style="list-style-type: none"> Régler le mode d'essai (TEST). Reproduire le disque d'essai (TEST) et raccorder la sonde d'un oscilloscope à la broche 1 RF (sortie RF) de TP1 et mesurer la tension C-C de la forme d'onde RF. Régler VR1 (puissance laser) de façon que la tension soit de 1.5 Vc-c $\pm 50\%$. |
| 3 | VÉRIFICATION DE LA PUISSANCE DE SORTIE DE LA DIODE LASER (LD) | | | | |
| | | | | Confirmation : moins de 0.13mW | <ul style="list-style-type: none"> Régler le mode d'essai (TEST). Appuyer sur la touche de centrage de piste arrière $[-MULTI-SPEED+]+[0]$ et enclencher la diode laser (LD). Placer la capteur de l'instrument destiné à mesurer la puissance laser au dessus de l'objectif et vérifier que la puissance de sortie de la diode laser (LD) est inférieure à 0.13 mW. |
| 4 | VÉRIFICATION DU VERROUILLAGE DE FOCALISATION ET DU VERROUILLAGE DE MOYEU | | | | |
| | 0.5V/div | 100msec /div | TP1 Broche 1 (Sortie RF) | Présence de sortie RF Rotation normale | <ul style="list-style-type: none"> Mettre en place le disque d'essai (TEST). Régler le mode d'essai (TEST). Déplacer la tête de lecture à proximité du centre du disque en appuyant sur la touche de recherche $[-MULTI-SPEED+]+[4]$. * Cette étape doit absolument être réalisée. Observer le signal RF à la broche 1 de TP1 (sortie RF) au moyen d'un oscilloscope et vérifier que le signal RF sorte après l'enfoncement de la touche d'avance de piste $[-MULTI-SPEED+]+[1]$. Appuyer sur la touche de lecture $[-MULTI-SPEED+]+[2]$ et s'assurer que le disque tourne en sens normal avec approximativement la vitesse spécifiée (étant près du centre du disque, la vitesse de rotation est d'environ 300 tr/mn), sans anomalie ni inversion du sens de rotation. |

| Pas No. | Réglage de l'oscilloscope | Points d'essai | Points de réglage | Points de contrôle / spécifications de réglage | Méthode de réglage |
|---|---------------------------|-------------------------------|-------------------|--|---|
| | V | H | | | |
| 5 RÉGLAGE DU RÉSEAU | | | | | |
|  | | | | | |
| 0,5V/div | 5msec /div | TP1 Broche 2 (TRK. ERR) | Réseau | Point zéro Amplitude maximum | <ul style="list-style-type: none"> ● Régler le mode d'essai (TEST). ● Amener la tête de lecture à proximité du centre du disque en appuyant sur la touche de recherche manuelle avant [-MULTI-SPEED+] [4], de façon à ce que la vis de réglage du réseau de la tête de lecture puisse être vue à travers le trou oval situé à la partie supérieure de l'asservissement. ● Insérer un Θ tournevis dans le trou de réglage depuis la partie supérieure du mécanisme, comme illustré à la figure 7-7, puis vérifier que la vis de réseau tourne. ● Appuyer séquentiellement sur les touches de piste avant [-MULTI-SPEED+] [1] et [-MULTI-SPEED+] [2], et fermer les asservissements de focalisation et de moyen. (Ne pas fermer l'asservissement de centrage de piste.) ● Observer la forme d'onde à la broche 2 TRK. ERR (erreur de centrage de piste) de TP1 au moyen d'un oscilloscope. <p>Introduire alors un filtre de coupure passe-bas 4kHz. (Fig. 7-8)</p> |
|  | | | | | |
| <p>Fig. 7-7</p> <p>Fig. 7-8</p> | | | | | |
| <p>Note : Si le Θ tournevis est appuyé avec force, la tête de lecture se déplace vers le centre du disque et le réglage devient difficile à effectuer.</p> <ul style="list-style-type: none"> ● Faire tourner un Θ tournevis et rechercher le point zéro. (Photo 7-1) ● Tourner ensuite lentement dans le sens contraire des aiguilles d'une montre le Θ tournevis depuis le point zéro et l'ajuster sur le point où la forme d'onde (signal d'erreur de centrage de piste) présente une première amplitude maximum. (Voir photo 7-2.) ● Finalement, s'assurer que le signal d'erreur de centrage de piste (cette fois-ci le filtre de coupure passe-bas à 4kHz n'est pas introduit) n'a pas beaucoup varié lorsque la tête de lecture est déplacée vers le centre du disque, et aussi que la tension C-C du signal de centrage de piste n'a pas non plus beaucoup varié sur la circonference extérieure du disque. Lorsque le niveau varie de plus de $\pm 10\%$, recommencer le réglage en tournant la vis de réseau jusqu'au point d'amplitude d'erreur maximum. | | | | | |

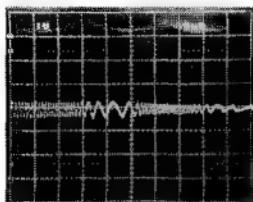


Photo. 7-1
Point nul

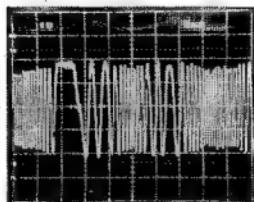


Photo. 7-2
Amplitude maximale

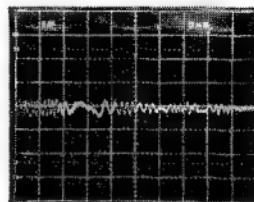


Photo. 7-3
Ceci n'est pas la forme d'onde du point nul

| Pas No. | Réglage de l'oscilloscope | | Points d'essai | Points de réglage | Points de contrôle / spécifications de réglage | Méthode de réglage |
|--|---------------------------|------------|-------------------------------|-------------------|--|---|
| | V | H | | | | |
| 6 RÉGLAGE DE L'EQUILIBRAGE DE CENTRAGE DE PISTE | | | | | | |
| | 0,5V/div | 5msec /div | TP1 Broche 2 (TRK. ERR) | VR5 (TRK. BAL) | TRK. ERR | <ul style="list-style-type: none"> Mettre en place le disque d'essai (TEST). Régler le mode d'essai (TEST). Amener la tête de lecture à proximité du centre du disque en appuyant sur la touche de recherche manuelle avant [-MULTI-SPEED+] [+4]. Appuyer sur la touche de piste avant [-MULTI-SPEED+] [+1] et sur la touche de lecture [-MULTI-SPEED+] [+2] pour faire tourner le disque. Observer la broche 2 TRK. ERR (erreur de centrage de piste) de TPI au moyen d'un oscilloscope et ajuster au moyen de potentiomètre VR5 TRK. BAL (équilibrage de centrage de piste) de façon à ce que la composante continue de l'erreur de centrage de piste disparaîtse. <p>Note: Avant de procéder aux ajustements ci-dessus, veiller à régler le décalage d'erreur de piste.</p> |

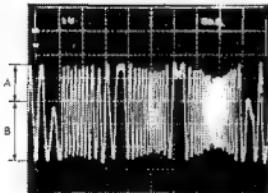


Photo. 7-4 Eléments CC mêlés au signal

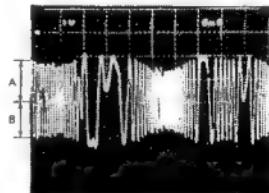


Photo. 7-5 Eléments CC éliminés

| Pas No. | Réglage de l'oscilloscope | Points d'essai | Pointe de réglage | Points de contrôle / spécifications de réglage | Méthode de réglage |
|-----------------------------|---------------------------|----------------|-----------------------------|--|--------------------|
| 7 RÉGLAGE TANGENTIEL | | | | | |
| | | 200nsec / div | TP1 Broche 1 (sortie RF) | Vis de réglage tangentiel | Mire Best Eye |

● Mettre en place le disque d'essai (TEST).
 ● Régler le mode d'essai (TEST).
 ● Amener la tête de lecture à proximité du centre du disque en appuyant sur la touche de recherche manuelle avant [-MULTI-SPEED+] [4].
 ● Appuyer séquentiellement sur les touches d'avance de piste [-MULTI-SPEED+] [1], [-MULTI-SPEED+] [2] et [-MULTI-SPEED+] [3], et fermer tous les asservissements. (Le voyant de pause s'allume.)
 ● Observer le signal RF à la broche 1 (sortie RF) de TP1 au moyen d'un oscilloscope et régler au moyen de la vis tangentielle de façon à ce que la mire Best Eye devienne claire. (Fig. 7-9 et 7-10)
 ● Le point de réglage se situe au milieu entre le point où la mire se détériore en tournant la vis tangentielle dans le sens des aiguilles d'une montre et le point où la mire se détériore en tournant la vis tangentielle dans le sens inverse des aiguilles d'une montre. Comme critère, observer que la forme d'onde globale soit claire et que l'une des formes de losange se situe dans la mire (Photo 7-7) ; réaliser le réglage en un point optimum où la forme de losange apparaît avec des traits relativement fins.

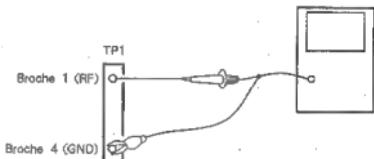


Fig. 7-9

Note : Pendant le réglage, tenir la clef six-pans vers le haut de façon à ce que le corps de la tête de lecture ne descende pas.



Dans l'illustration ci-dessous, le dessus et le dessous de l'appareil sont en réalité à l'envers.

Fig. 7-10 Réglage tangentiel

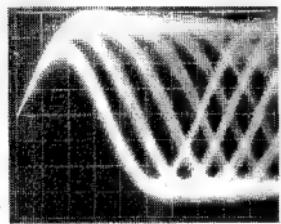


Photo. 7-6

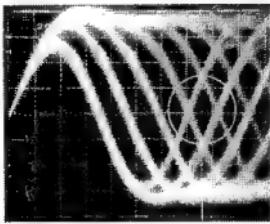


Photo. 7-7

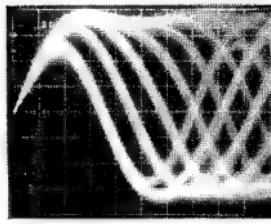
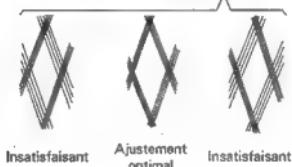


Photo. 7-8

Partie à observer



Insatisfaisant

Ajustement optimal

Insatisfaisant

| Pas No. | Réglage de l'oscilloscope | | Points d'essai | Points de réglage | Points de contrôle / spécifications de réglage | Méthode de réglage |
|--|--|---|------------------|-------------------------|--|--|
| | V | H | | | | |
| 8 RÉGLAGE DU GAIN DE FOCALISATION | | | | | | |
| | 20mV/div, 5mV/div. Canal 1 (X), Canal 2 (Y) (Sonde 10 : 1) | Axe X : TP1 Broche 5 (FCS.IN) Axe Y : TP1 Broche 6 (FCS.ERR) | VR3 (FCS.GAN) | Différence de phase 90° | | <ul style="list-style-type: none"> • L'alimentation étant coupée (POWER OFF), raccorder un oscilloscope et un oscillateur de la manière indiquée à la figure 7-11. • Régler l'appareil en mode de lecture normale. • Enclencher l'alimentation de l'oscillateur et délivrer un signal de 1.2kHz à 1Vc-c. <p>Note: En fonction de l'oscillateur utilisé, certains appareils fournissent un courant continu lors de leur enclenchement. Par conséquent, il est préférable de raccorder l'oscillateur après avoir enclenché son alimentation.</p> <ul style="list-style-type: none"> • Ajuster le potentiomètre VR3 FCS.GAN (gain de focalisation) de façon à ce que la figure de Lissajou observée sur l'oscilloscope devienne un cercle horizontal (déphasage 90°). |

Fig. 7-11

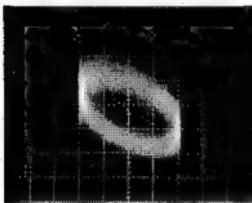


Photo. 7-9
Gain sur-compensé

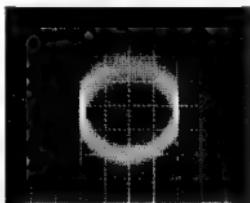


Photo. 7-10
Gain optimal

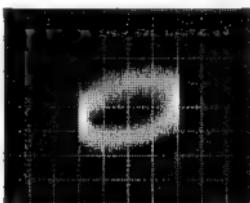


Photo. 7-11
Gain sous-compensé

| Pas No. | Réglage de l'oscilloscope | | Points d'essai | Points de réglage | Points de contrôle / spécifications de réglage | Méthode de réglage |
|---|---|---|-------------------|-------------------|---|--------------------|
| | V | H | | | | |
| B RÉGLAGE DU GAIN DE CENTRAGE DE PISTE | | | | | | |
| | 50mV/div. 5mV/div. Canal 1 (X). Canal 2 (Y). (Sonde 10:1) | Axe X : TP1 Broche 3 (TRK. IN) Axe Y : TP1 Broche 2 (TRK. ERR) | VR4 (TRK. GAN) | Déphasage 90° | <ul style="list-style-type: none"> • L'alimentation étant coupée (POWER OFF), raccorder un oscilloscope et un oscillateur de la manière indiquée à la figure 7-12. • Réglér l'appareil en mode de lecture normale. • Enclencher l'alimentation de l'oscillateur et fournir un signal de 1.2 kHz à 2 Vc-c. <p>Note : En fonction de l'oscilloscope utilisé, certains appareils fournissent un courant continu lors de leur enclenchement. Par conséquent, il est préférable de raccorder l'oscillateur après avoir enclenché son alimentation.</p> <ul style="list-style-type: none"> • Ajuster le potentiomètre VR4 TRK GAN (gain de centrage de piste) de façon à ce que la figure de Lissajou sur l'oscilloscope devienne un cercle horizontal (déphasage 90°). | |

Fig. 7-12

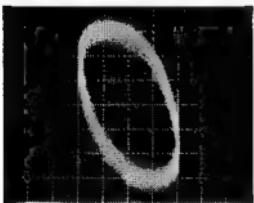


Photo. 7-12
Gain sur-compensé

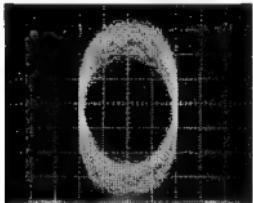


Photo. 7-13
Gain optimal

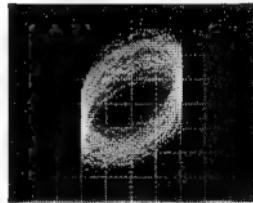


Photo. 7-14
Gain sous-compensé

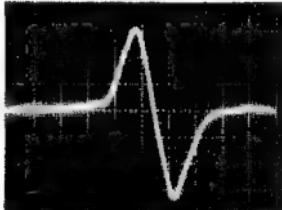
| Pas No. | Réglage de l'oscilloscope | | Points de réglage | Points de contrôle / spécifications de réglage | Méthode de réglage |
|--|---------------------------|---|-------------------------------|--|---------------------|
| | V | H | | | |
| 10 RÉGLAGE DE LA FRÉQUENCE PROPRE DU VCO | | | | | |
| | | | TP2 Broche 8 (PLCK) | VR8 (VCO. ADJ) | 4,275 \pm 0,01MHz |
| <ul style="list-style-type: none"> • Régler le mode d'essai (TEST). • Court-circuiter entre broches 25 et 26 de l'IC1 dans l'assemblage DEGT à l'aide d'un Θ tournevis. • Recorder un fréquencemètre capable de mesurer au dessus de 10 MHz à la broche 8 de TP2 (PLCK). • Ajuster le potentiomètre VR8 VCO ADJ (réglage du VCO) de façon à ce que la valeur indiquée par le fréquencemètre devienne égale à 4,275 \pm 0,01MHz. | | | | | |
| 11 MÉTHODE DE CONTRÔLE DE LA CARACTÉRISTIQUE S (ERREUR DE FOCALISATION) | | | | | |
| | | | TP1 Broche 6 (FCS. ERR) | | |
| <ul style="list-style-type: none"> • Régler le mode d'essai (TEST). • Réaliser un court-circuit entre la broche 5 FCS. IN (entrée de focalisation) de TP1 et la terre GND. • Appuyer sur la touche d'avance de piste [MULTI-SPEED]+[I] et observer simultanément la forme d'onde à la broche 6 FCS. ERR (erreur de focalisation) de TP1 au moyen d'un oscilloscope. | | | | | |
|  | | | | | |

Photo. 7-15 Erreur de mise au point

7. AJUSTES

7.1 AJUSTES MECÁNICOS

7.1.1 SECCIÓN PRINCIPAL

• Tres lados de ajuste sincrónico del menú (Fig. 7-1)

PREPARATIVOS

- Ajuste sin instalar el motor (menú).
- Fije la polea central al eje del menú con los tornillos.
- (1) Aplique la correa de sincronización entre la polea de sincronización y la polea central en ambos lados, derecho e izquierdo.
- (2) Aplicando resorte (tensión) al armazón inferior y la placa tensora, aplique tensión a la correa de sincronización.
- (3) Fije la placa tensora en el armazón inferior con un tornillo ①.
- (4) Colocando una placa plana, como una regla, entre ellas, alinee las tres superficies del menú entre sí de forma que queden al mismo nivel.
- (5) Fije el eje de menú en la polea de sincronización empleando una llave hexagonal.
- (6) Extraiga la placa colocada sobre el menú y compruebe los ítems siguientes girando manualmente el menú.
 1. Compruebe si las tres superfcies del menú giran sin interrupción brusca.
 2. Compruebe si todas las tres superficies del menú alinean entre sí de forma que queden al mismo nivel después de girar el eje del menú una vez.

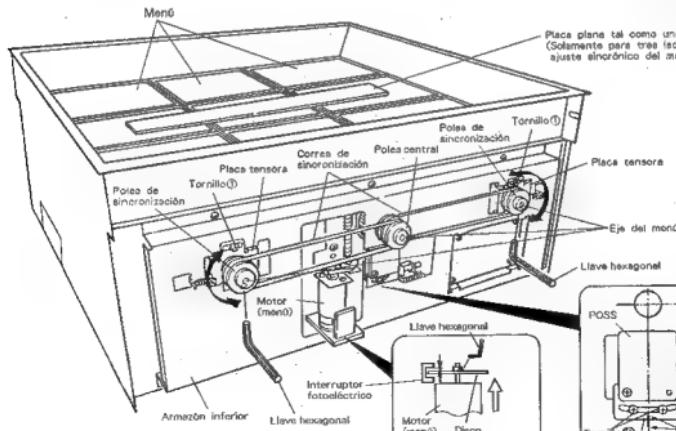


Fig. 7-1

Fig. 7-2

Placa plana tal como una regla
(Sólo para tres lados de ajuste sincrónico del menú)

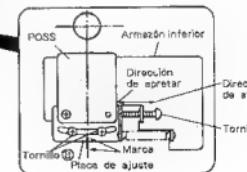
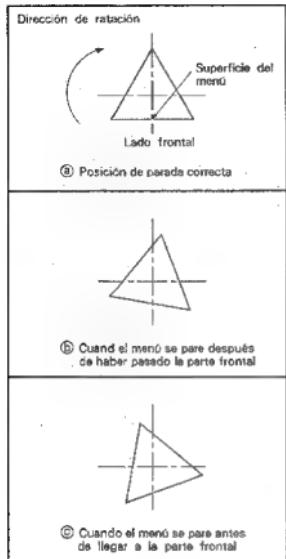


Fig. 7-3

• Ajuste de la posición de parada de la rotación del menú PREPARATIVOS

- Afloje el tornillo ④ que sostiene el disco decodificador con una llave hexagonal.
- Afloje el tornillo ③ que sostiene la placa de ajuste.
- Ajuste con el motor (menú) instalado.
- (1) Ajuste la separación entre el disco decodificador y el interruptor fotoeléctrico del motor (menú) a 1.5 mm. (Fig. 7-2)
- (2) Fije el tornillo del disco decodificador apretándolo con una llave hexagonal.
- (3) Gire el tornillo ③ de forma que la marca grabada en la placa de ajuste quede alineada con el armazón inferior. Despues apriete temporalmente el tornillo ④.
- (4) Presione la tecla ROTATE MENU del panel frontal de la unidad principal para que el menú gire. Despues realice los ajustes siguientes dependiendo de la condición. (Fig. 7-3)
- Cuando el menú se pare después de haber pasado la parte frontal
 - Afloje el tornillo ④ y apriete el tornillo ③ girándolo hacia la derecha.
- Cuando el menú se pare antes de llegar a la parte frontal
 - Afloje el tornillo ④ y gire el tornillo ③ hacia la izquierda para aflojarlo.
- (5) Vuelva a girar el menú y apriete firmemente el tornillo ④ cuando el menú se pare dirigiendo sus superficies hacia la parte frontal. (Fig. 7-4 ④)
- (6) Finalmente, gire el menú y compruebe si se para dirigiendo sus tres superficies hacia la parte frontal cada 120° de rotación.



7.1.2 SECCIÓN DE CD

PREPARATIVOS

- Coloque el cargador en el primer y tercer módulo de la unidad principal de CD.
- Conecte el telemando (RU-V101) a la unidad principal de CD.

1. Ajuste aproximado de la posición seleccionada

(1) Ajuste la distancia entre la parte superior de la placa de sensor y la del chasis principal a 7 mm girando el tornillo ④.

2. Ajuste de la posición seleccionada

(1) Primero, realice el procedimiento siguiente.

① Presione las teclas en el orden de ① + ⑧ + STILL / STEP ▶ (DISC SELECT) + STILL / STEP ▶ (DISC RETURN). Cuando termine la operación, compruebe si la separación entre la parte superior de la palanca de rotación y la de la sexta bandeja en el cargador es $0,3 \frac{1}{2} \pm 0,1$.

② Si la separación excede a la gama especificada, gire el tornillo ④ para ajustar la posición de la placa de sensor y vuelva a presionar las teclas en el orden de ① + ⑧ + STILL / STEP ▶ (DISC SELECT) + STILL / STEP ▶ (DISC RETURN) hasta que la separación se vuelva dentro de la gama especificada.

③ Presione las teclas en el orden de ⑧ + STILL / STEP ▶ (DISC SELECT) + STILL / STEP ▶ (DISC RETURN) y compruebe si la separación entre la parte superior de la palanca de rotación y la de la sexta bandeja en el cargador es $0,3 \text{mm} \pm 0,1 \text{mm}$.

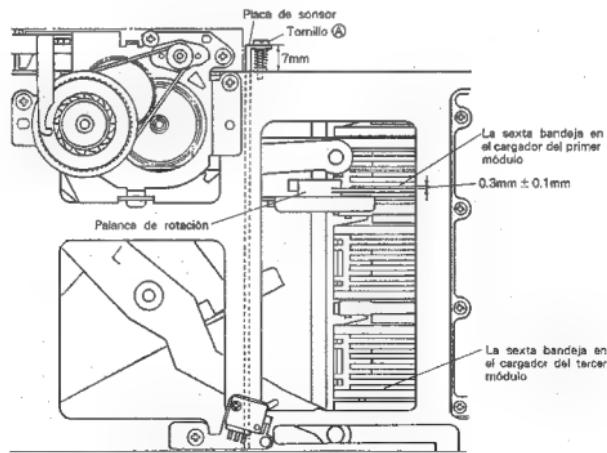


Fig. 7-5

7.2 AJUSTES ELECTRICOS

Los ítems de ajuste de este modelo deberán ser efectuados en el orden mostrado abajo.

• Ítems de ajuste y comprobación

1. Ajuste de desviación de seguimiento, foco y RF.
2. Ajuste del nivel de RF
3. Confirmación de la alimentación de salida de LD (diodo láser)
4. Confirmación de enclavamiento del enfoque y del eje
5. Ajuste del retículo
6. Ajuste del equilibrio de seguimiento
7. Ajuste tangencial
8. Ajuste de la ganancia de enfoque
9. Ajuste de la ganancia de seguimiento
10. Ajuste de la frecuencia propia de VCO
11. Método para confirmar el carácter S (error de enfoque)

• Equipo de medición

1. Osciloscopio de doble traza
2. Medidor de alimentación del láser
3. Disco de prueba (YEDS-7)
4. Filtro de ajuste de equilibrio de seguimiento
5. Filtro de ajuste de ganancia de bucle
6. Generador de señal
7. Contador de frecuencia
8. Otras herramientas generales
9. Telemando (RU-V101)

• Modo de operación

Si conecta el telemando (RU-V101) a la unidad principal de CD, podrá operarla a distancia.

Con respecto a la operación refiérase al manual de operación(1). (ARP2047):Modo de operación(página 14)

Nota: Antes de operar el telemando (RU-V101), mueva el mecanismo con las teclas numéricas + teclas STILL/STEP II (DISC SELECT) hasta la posición donde se ha colocado el disco de prueba.

• Tornos variables (VR) de ajuste y sus nombres

VR1 : Alimentación del láser
 VR2 : Compensación de RF (RF.OFS)
 VR3 : Ganancia de enfoque (FCS.GAN)
 VR4 : Ganancia de seguimiento (TRK.GAN)
 VR5 : Equilibrio de seguimiento (TRK.BAL)
 VR6 : Desviación de enfoque (FCS.OFS)
 VR7 : Desviación del seguimiento (TRK.OFS)
 VR8 : Ajuste de VCO (VCO.ADJ)

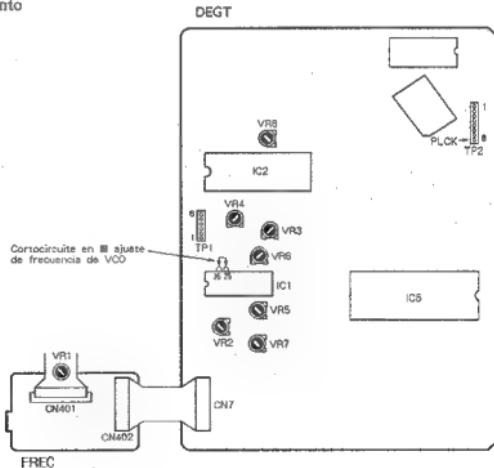
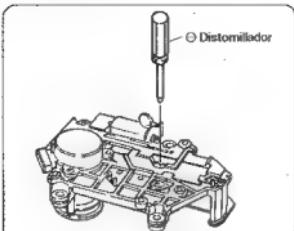
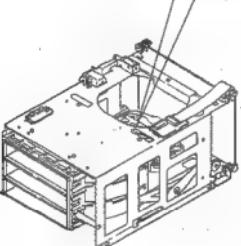
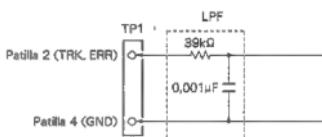


Fig. 7-6 Punto de ajuste

| No. de paso | Ajuste del osciloscopio | | Puntos de prueba | Puntos de ajuste | Items de verificación/ Especificaciones de ajuste | Procedimiento de ajuste |
|--|-------------------------|------------------------------|---------------------------------|--|--|-------------------------|
| | V | H | | | | |
| 1 AJUSTES DE LA DESVIACIÓN DE SEGUIMIENTO, FOCO Y RF | | | | | | |
| | | | VR5 (TRK.BAL) | Desviación de seguimiento 45° | ● Ajuste el modo de TEST. ● Gire el volumen de TRK.BAL (Equilibrio de seguimiento) de VR5 en el sentido de las manecillas del reloj 45° del centro. | |
| | | Patilla 2 de TP1 (TRK.ERR) | VR7 (TRK.OFS) | 0V ± 50mV | ● Ajuste VR7 TRK.OFS (de seguimiento) de modo que el voltaje en TRK.ERR (desviación de seguimiento) de la patilla 2 de TP1 se ponga en $0V \pm 50mV$. | |
| | | Patilla 6 de TP1 (FCS.ERR) | VR6 (FCS.OFS) | Compens. de foco 0V ± 50mV | ● Ajuste VR6 FCS.OFS (compensación de foco) de modo que el voltaje de FCS.ERR (error de foco) en la patilla 6 de TP1 sea $0V \pm 50mV$. | |
| | | Patilla 1 de TP1 (RF OUTPUT) | VR2 (RF.OFS) | Compens. de RF $100mV \pm 50mV$ | ● Ajuste VR2 RF.OFS (compensación de RF) de modo que el voltaje de salida de RF en la patilla 1 de TP1 sea $100mV \pm 50mV$. | |
| 2 AJUSTE DEL NIVEL DE RF | | | | | | |
| | | Patilla 1 de TP1 (RF) | Alimentación del laser VR1 | $1.5Vp-p^{+0.2V}_{-0V}$ | ● Ajuste el modo de TEST. ● Reproduzca el disco de TEST y conecte la sonda de un osciloscopio a la RF de la patilla 1 (Salida de RF) de TP1 y mida el voltaje de P-P de la forma de onda de RF. ● Ajuste VR1 (alimentación del láser) que el valor sea $1.5Vp-p^{+0.2V}_{-0V}$. | |
| 3 CONFIRMACIÓN DE LA ALIMENTACIÓN DE SALIDA DE LD (DIODO LÁSER) | | | | | | |
| | | | | Confirmación Menos de 0.13mW | ● Ajuste el modo de TEST. ● Presione la tecla de \square -MULTI-SPEED- \square y encienda el LD (Diodo láser). ● Ubique el sensor del medidor de potencia del láser inmediatamente arriba del objetivo, y confirme que la potencia de salida del LD sea menos de 0.13 mW. | |
| 4 CONFIRMACIÓN DE ENCLAMIENTO DEL ENFOQUE Y DEL EJE | | | | | | |
| | 0.5V/div | 100mseg /div | Patilla 1 de TP1 (Salida de RF) | Existe salida de RF Rotación normal | ● Ajuste del disco de TEST. ● Ajuste del modo de TEST. ● Cambie el capitolador cerca del centro del disco presionando la tecla de \square -MULTI-SPEED- \square - \square [4]. * Tenga en cuenta que este paso deberá ser ejecutado. ● Observe RF (Radio frecuencia) de la patilla 1 de TP1 con un osciloscopio y confirme que se saque la señal de RF después de presionar la tecla de \square -MULTI-SPEED- \square - \square [1]. ● Presione la tecla de \square -MULTI-SPEED- \square - \square [2] y asegúrese que el disco rota en la dirección normal casi a la velocidad especificada (tal como está cerca del centro del disco, la velocidad de rotación es alrededor de 300 rpm) y que no rote anormalmente o inversamente. | |

| No. de paso | Ajuste del osciloscopio | Puntos de prueba | Puntos de ajuste | Items de verificación/ Especificaciones de ajuste | Procedimiento de ajuste |
|----------------------------|-------------------------|-----------------------------|---|--|---|
| | V | | | | |
| AJUSTE DEL RETÍCULO | | | | | |
| | | | | | <ul style="list-style-type: none"> Ajuste el modo TEST. Cambie el captador cerca del centro del disco presionando la tecla de [MULTI-SPEED] + [4] de modo que el tornillo de ajuste de retículo del captador pueda ser visto a través del orificio oval en el lado superior del servomecanismo. Inserte un Θ destornillador en el orificio del lado superior o del mecanismo como se muestra en la Fig. 7-7, y confirme que gira el tornillo de retículo. Presione la tecla de [MULTI-SPEED] + [1] y [MULTI-SPEED] + [2] secuencialmente y cierre el servo de enfoque y el del eje. (No cierre el servo de seguimiento.) Observe la forma de onda en TRCK. ERR (Error de seguimiento) de la patilla 2 de TP1 con un osciloscopio. Luego inserte un filtro de paso bajo de corte. (Fig. 7-8) |
| | | |  | | |
| | | |  | | |
| | | | | |  |
| | | | | | <p>Fig. 7-7</p> <p>Fig. 7-8</p> |
| 0,5V/div | 5msseg /div | Patilla 2 de TP1 (TRK. ERR) | Reticulo | Punto cero | <ul style="list-style-type: none"> Gire el Θ destornillador y encuentre el punto cero. (Foto. 7-1) Luego, gire lentamente el Θ destornillador hacia el sentido contrario del reloj desde el punto cero y ajuste en el punto donde la forma de onda (Senal de error de seguimiento) primeramente se ponga a una amplitud máxima. (Vea Foto. 7-2) <p>Nota : Si el Θ destornillador se presiona fuertemente, el captador se mueve hacia el centro del disco, por consiguiente el ajuste resulta difícil.</p> <ul style="list-style-type: none"> Finalmente, asegúrese de confirmar que la señal de error de seguimiento (en este momento, no se ha insertado el filtro de paso bajo de corte de 4kHz) cuando el captador se mueve hacia el centro del disco y el voltaje de P-P de la señal de error de seguimiento en la circunferencia exterior del disco no haya variado considerablemente. Cuando se desvía el nivel arriba de $\pm 10\%$, ajuste de nuevo girando el tornillo de retículo a un punto de amplitud de error mínimo. |

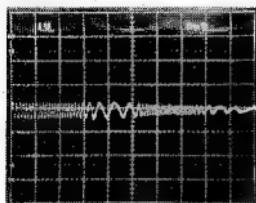


Foto. 7-1
Punto nulo

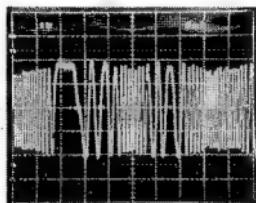


Foto. 7-2
Amplitud máxima

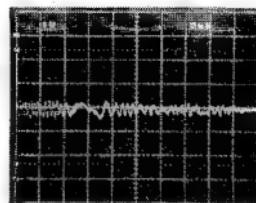


Foto. 7-3
Esta no es la forma de onda de punto nulo

| No. de paso | Ajuste del osciloscopio | Puntos de prueba | Puntos de ajuste | Ítems de verificación/ Especificaciones de ajuste | Procedimiento de ajuste |
|---|-------------------------|-----------------------------|------------------|---|--|
| 6 AJUSTE DEL EQUILIBRIO DE SEGUIMIENTO | | | | | |
| | 0,5V/div 5mseg /div | Patilla 2 de TPI (TRK. ERR) | VRS (TRK. BAL) | TRK. ERR | <ul style="list-style-type: none"> ● Ajuste el disco de TEST. ● Ajuste el modo de TEST. ● Cambie el captador cerca del centro del disco presionando la tecla de $[-MULTI-SPEED+] + [4]$. ● Presione la tecla de $[-MULTI-SPEED+] + [1]$ y la tecla de $[-MULTI-SPEED+] + [2]$ para comenzar a voltear el disco. ● Observe TRK. ERR (Error de seguimiento) de la patilla 2 de TPI con un osciloscopio y ajuste con el volumen de TRK. BAL (Equilibrio de seguimiento) de VRS de modo que la componente de CC del error de seguimiento desaparezca. <p>Nota: Antes de realizar los ajustes indicados arriba, asegúrese de compensar el error de seguimiento.</p> |

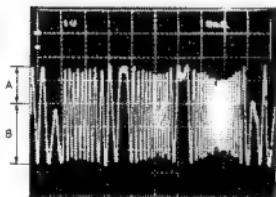


Foto. 7-4
Elementos de CC mezclados en la señal

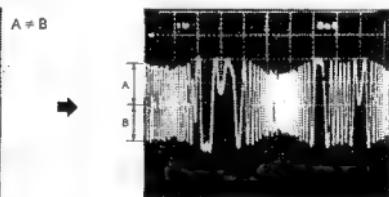


Foto. 7-5
Elementos de CC eliminados

| No. de paso | Ajuste del osciloscópico | | Puntos de prueba | Puntos de ajuste | Ítems de verificación/ Especificaciones de ajuste | Procedimiento de ajuste |
|----------------------------|--------------------------|---------------------------------|-------------------------------------|------------------------|--|--|
| | V | H | | | | |
| 7 AJUSTE TANGENCIAL | | | | | | |
| | 200nseg /div | Patilla 1 de TP1 (Salida de RF) | Tornillo de ajuste de la tangencial | Mejor imagen de prueba | | <ul style="list-style-type: none"> Ajuste el disco de TEST. Ajuste el modo de TEST. Cambie el carro cerca del centro del disco presionando la tecla de [MULTI-SPEED+] + [4]. Presione la tecla de [MULTI-SPEED+] + [1], [MULTI-SPEED+] + [2] y [MULTI-SPEED+] + [3] secuencialmente, y cierre todos los servos. (El indicador de pausa se enciende.) Observe el RF de la patilla 1 (Salida de RF) de TP1 con un osciloscopio y ajuste con el tornillo de la tangencial de modo que la imagen de prueba resulte nítida. (Fig. 7-9 y 7-10) El punto de ajuste es el punto medio entre el punto donde la imagen de prueba se deteriora girando el tornillo de la tangencial en el sentido de las manecillas del reloj, y el punto donde la imagen de prueba se deteriora girando el tornillo de la tangencial en contra del sentido de las manecillas del reloj. Como un criterio, observe que la forma de onda en conjunto sea nítida y que una de las figuras de diamante esté dentro de la imagen de prueba (Foto. 7-7), y ajuste al punto óptimo donde la forma de diamante se vea relativamente como una línea fina. |

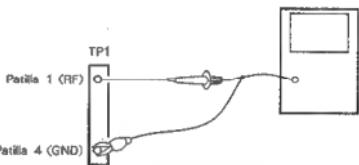
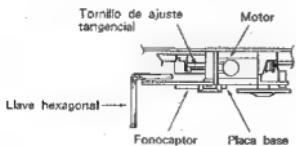


Fig. 7-9

(Nota) Durante el ajuste, sostenga la llave hexagonal hacia arriba para evitar que el cuerpo del captador vaya hacia abajo.



En la figura siguiente, las partes superior e inferior son opuestas a las del producto real.

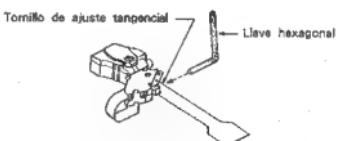


Fig. 7-10 Ajuste tangencial

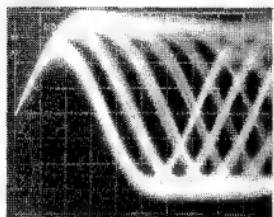


Foto. 7-6

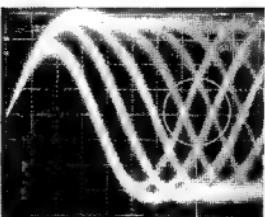


Foto. 7-7

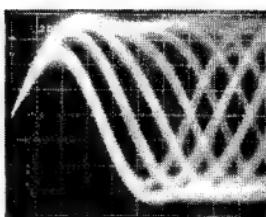


Foto. 7-8

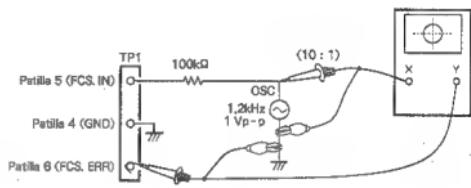
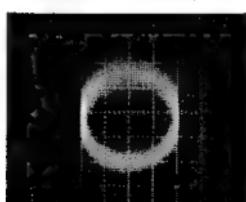
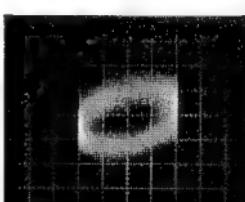
Parte que debe observar

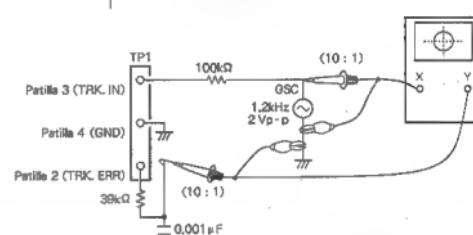
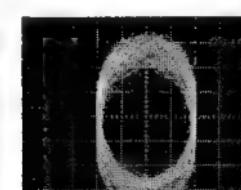
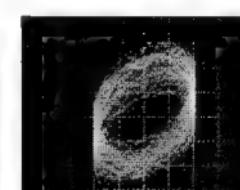


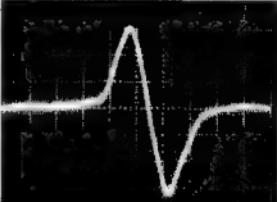
Inatisfactorio

Ajuste óptimo

Inatisfactorio

| No. de paso | Ajuste del osciloscopio | Puntos de prueba | Puntos de ajuste | Ítems de verificación/ Especificaciones de ajuste | Procedimiento de ajuste |
|---|--|---|-------------------|---|--|
| | V | | | | |
| 8 AJUSTE DE LA GANANCIA DE ENFOQUE | | | | | |
| | 20mV/div. 5mV/div. CH1 (X), CH2 (Y) (SONDA 10:1) | Eje X : Patilla 5 de TP1 (FCS. IN) Eje Y : Patilla 6 de TP1 (FCS. ERR) | VR3 (FCS. GAN) | Diferencia de fase 90° | <ul style="list-style-type: none"> En el estado de POWER OFF (apagado), conecte el osciloscopio y el oscilador como se muestra en la Fig. 7-11. Ponga la unidad en el modo de reproducción (PLAY) normal. Encienda el oscilador y extraiga 1.2kHz 1Vp-p. <p>Nota : Dependiendo en los osciladores, algunos de ellos producen CC cuando son encendidos. Por lo tanto, es conveniente conectar el oscilador después del encendido.</p> <ul style="list-style-type: none"> Ajuste con el volumen de FCS.GAN (Ganancia de enfoque) de VR3 de modo que la figura de Lissajous del osciloscopio sea un círculo horizontal (90° de diferencia de fase).  |
| | | | | |  <p>Foto. 7-9 Ganancia sobrecompensada</p> |
| | | | | |  <p>Foto. 7-10 Ganancia óptima</p> |
| | | | | |  <p>Foto. 7-11 Ganancia subcompensada</p> |

| No. de paso | Ajuste del osciloscopio | Puntos de prueba | Puntos de ajuste | Ítems de verificación/ Especificaciones de ajuste | Procedimiento de ajuste |
|---|---|---|-------------------|---|---|
| | V H | | | | |
| 9 AJUSTE DE LA GANANCIA DE SEGUIMIENTO | | | | | |
| | 50mV/div. 5mV/div. CH1 (X0). CH2 (Y) (SONDA 10:1) | Eje X : Patilla 3 de TP1 (TRK. IN) Eje Y : Patilla 2 de TP1 (TRK. ERR) | VR4 (TRK. GAN) | 90° de diferencia | <ul style="list-style-type: none"> ● En el estado de POWER OFF (apagado), conecte un osciloscopio y un oscilador como se muestra en la Fig. 7-12. ● Ponga la unidad en el modo de reproducción (PLAY) normal. ● Encienda el oscilador y extraiga 1.2 kHz 2 Vp-p. Nota: Dependiendo en los osciladores, algunos de ellos producen CC cuando son encendidos. Por lo tanto, es conveniente conectar el oscilador después del encendido. ● Ajuste con el volumen de TRK. GAN de VR4 (Ganancia de seguimiento) de modo que la figura de Lissajous del osciloscopio llegue a ser un círculo horizontal (90° de diferencia de fase).  |
| | | | | | Fig. 7-12 |
| | | | | |  |
| | | | | | Foto. 7-12 Ganancia sobrecompensada |
| | | | | |  |
| | | | | | Foto. 7-13 Ganancia óptima |
| | | | | |  |
| | | | | | Foto. 7-14 Ganancia subcompensada |

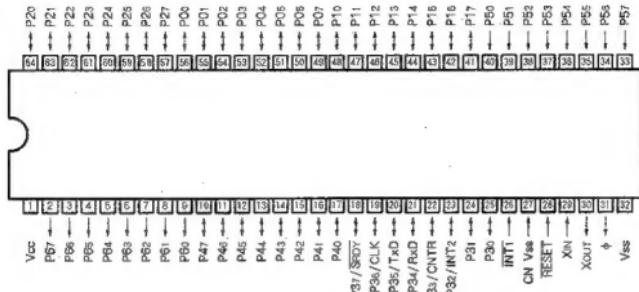
| No. de paso | Ajuste del osciloscopio | | Puntos de prueba | Puntos de ajuste | Items de verificación/ Especificaciones de ajuste | Procedimiento de ajuste |
|--|-------------------------|---|----------------------------|------------------|--|---|
| | V | H | | | | |
| 10 AJUSTE DE LA FRECUENCIA PROPIA DE VCO | | | | | | |
| | | | Patilla 8 de TP2 (PLCK) | VR8 (VCO. ADJ) | 4.275 ± 0.01MHz | <ul style="list-style-type: none"> • Ajuste el modo de TEST. • Cortocircuite entre las patillas 25 y 26 de IC1 en el ensamblaje DEGT con un destornillador Θ, etc. • Conecte el frecuencímetro, que pueda medir arriba de 10 MHz, a la patilla 8 de TP2 (PLCK). • Ajuste con el volumen VCO ADJ (ajuste de VCO) de VR8 de modo que el valor del frecuencímetro se ponga en 4.275 ± 0.01 MHz. |
| 11 MÉTODO PARA CONFIRMAR EL CARÁCTER S (ERROR DE ENFOQUE) | | | | | | |
| | | | Patilla 6 de TP1 (FCS. IN) | | | <ul style="list-style-type: none"> • Ajuste el modo de TEST. • Haga un cortocircuito entre FCS. IN (Entrada de enfoque) y la patilla 5 de TP1 y GND. • Presione la tecla de -MULTI-SPEED + II y observe la forma de onda de FCS. ERR (Error de enfoque) de la patilla 6 de TP1 con un osciloscopio. |
| | | | | | |  |
| Foto. 7-15 Error de enfoque | | | | | | |

8. IC DESCRIPTION

■ M50747SP

SYSTEM CONTROL (ROM LESS TYPE)

● Pin connections (Top view)



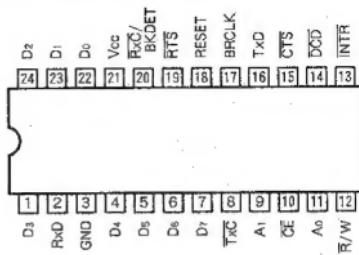
● Pin functions

| Pin | Mark | Pin name | I/O | Function |
|---------|------------|----------------------|-----|---|
| 1 | Vcc | Power supply input | I | Apply +5V to Vcc. |
| 2 - 9 | P67 - P60 | Output port P6 | O | 8 bits output port. |
| 10 - 17 | P47 - P40 | Input/output port P4 | I/O | 8 bits input/output port. |
| 18 | P37 / SRDY | | | |
| 19 | P36 / CLK | | | |
| 20 | P35 / TxD | | | |
| 21 | P34 / RxD | | | 8 bits input/output port. When P3s, P3s and P3s is used for serial I/O, it respectively become CLK, TxD and RxD. When P3s is used for serial I/O of the clock synchronized type, it becomes Sreq. P3s is combined with I/O terminal of timer X (CNTR). P3s is combined with lowermost interrupt. |
| 22 | P3s / CNTR | | | |
| 23 | P3s / INT2 | | | |
| 24 | P3s | | | |
| 25 | P3s | | | |
| 26 | INT1 | Interrupt input | I | Upper most interrupt input terminal. |
| 27 | CN Vss | CN Vss input | | Connect to Vss. |
| 28 | RESET | Reset input | | Set the "L" more than 2μs, it becomes reset state. |
| 29 | Xin | Clock input | O | Connect the crystal resonator. |
| 30 | Xout | Clock output | | |
| 31 | ϕ | Timing output | O | Timing output. |
| 32 | Vss | Power supply input | I | Apply OV to Vss. |
| 33 - 40 | P57 - P50 | Input port P5 | I/O | 8 bits input port. |
| 41 - 48 | P17 - P10 | Input/output port P1 | | 8 bits input/output port. |
| 49 - 56 | P07 - P00 | Input/output port P0 | | 8 bits input/output port. |
| 57 - 64 | P27 - P20 | Input/output port P2 | | 8 bits input/output port. |

■ HD64941

WALL BOX COMMUNICATION

● Pin connections (Top view)



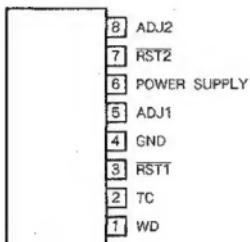
● Pin functions

| Pin | Mark | Pin name | I/O | Function |
|---------|-------------|----------------------------------|-----|--|
| 1 | D3 | DATA BUS ₀ | | |
| 4 ~ 7 | D4 ~ D7 | DATA BUS ₇ | I/O | Bilateral data bus which using for data transfer with the CPU. High impedance at the reset. |
| 22 ~ 24 | D0 ~ D2 | | | |
| 2 | RxD | RECEIVER DATA | I | Serial data input terminal to the reception section. "Mark" : "H", "Space" : "L" |
| 16 | TxD | TRANSMITTER DATA | O | Serial data output terminal from the transmission section. "Mark" = "H", "Space" : "L" "H" at the transmission section is not operated, and "H" at the reset. |
| 3 | GND | GROUND | — | Ground |
| 21 | Vcc | POWER SUPPLY | — | + 5V power supply. |
| 8 | RXC | TRANSMITTER CLOCK | | Clock input terminal of the transmission section. TxD is used to synchronize with the transmission data when using the external transmission clock. RXC is used for the 1X/16X clock output terminal when using the internal transmission clock. Input state at the reset. |
| 9 | A1 | ADDRESS LINE 0,1 | | Signal for select the internal register. |
| 11 | A0 | | | |
| 10 | CE | CHIP ENABLE | | Addressing terminal of the CPU and internal HD64941. • When CE = L, perform the reading and writing operation to the internal register which is regulated with R/W, Ao and A1. • When CE = H, set the D0 through D7 to high impedance state. |
| 12 | R/W | READ/WRITE | | Terminal for control the direction of the data transfer. |
| 13 | INTR | INTERRUPT | | Output terminal of the interrupt required signal "H" at the reset. |
| 14 | DCD | DATA CARRIER DETECT | | Detection input terminal of the data carrier. When DCD is "L", reception section is able to operate. |
| 15 | CTS | CLEAR TO SEND | | Clear to send (transmission) input terminal. CTS have to "L" for operating the transmission section. When becomes "H" during transmit; the end of transmission after complete the character transmission in the shift register for the transmission. |
| 17 | BRCLK | BAUD RATE CLOCK | | Clock input terminal for generating the internal baud rate. It's useless to use the external transmission and reception clocks (RXC and RxD.) |
| 18 | RESET | RESET | | "0" clear terminal of the mode register 1 and 2, command register and status register. |
| 19 | RTS | REQUEST TO SEND | | General-purpose output terminal. RTS outputs which inverting the bit 5 of the command register (CR). Usually, it is used for require the transmission. |
| 20 | RXC / BKDET | RECEIVER CLOCK / BREAK DETECTION | | Clock input terminal of reception section. RXC is used to synchronize with the reception data when using the external reception clock. RXC is used for the output signal of brake detection (BK-DET) and the 1X/16X clock output terminal when using the internal reception clock. Input state at the reset. |

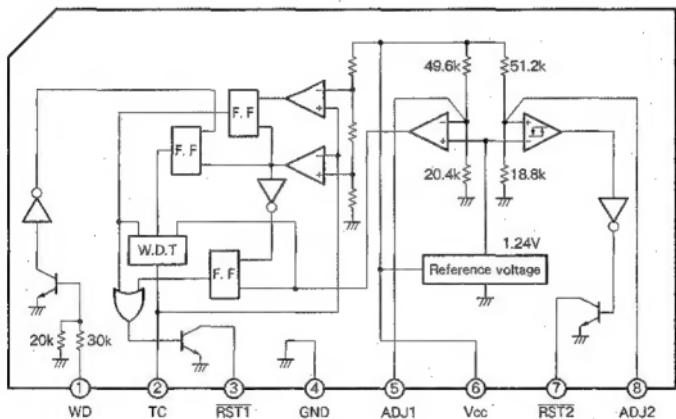
■ M5295L

WATCH-DOG TIMER

● Pin connections (Top view)



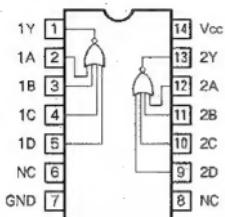
● Block diagram



■ TC74HC4002AP

DUAL 4-INPUT NOR GATE

● Pin connections (Top view)



Truth table

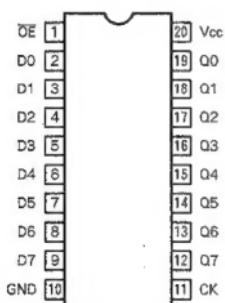
| A | B | C | D | Y |
|---|---|---|---|---|
| H | X | X | X | L |
| X | H | X | X | L |
| X | X | H | X | L |
| X | X | X | H | L |
| L | L | L | L | H |

X : Don't care

■ TC74HC574AP

OCTAL D-TYPE FLIP-FLOP WITH 3-STATE OUTPUT

● Pin connections (Top view)



Truth table

| INPUT | | OUTPUTS | |
|-------|----|---------|----------|
| CE | CK | D | Q (574A) |
| H | X | X | Z |
| L | — | X | Qn |
| L | — | L | L |
| L | — | H | H |

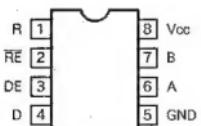
X : Don't Care

Z : High impedance

Qn (Qn) : No change

■ SN75176BP

● Pin connections (Top view)



Truth table

| INPUT | ENABLE | OUTPUTS | |
|-------|--------|---------|---|
| | | A | B |
| H | H | H | L |
| L | H | L | H |
| X | L | Z | Z |

H = high level, L = low level,

X = irrelevant, Z = high impedance (off)